

THE CULTIVATOR.

NEW

"TO IMPROVE THE SOIL AND THE MIND."

SERIES.

VOL. III.

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THE CULTIVATOR

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CLOSE OF THE VOLUME.

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IN bringing our labors for the year to a close, we would tender our numerous friends and patrons, the most profound thanks for the aid which they have so liberally extended to us. The present number closes the third volume of the new series of the Cultivator, (the thirteenth from the beginning;) and we confidently trust that in our extended intercourse with the public, no diminution of interest has been experienced.

Through the medium of our paper, more than sixteen thousand subscribers have had during the present volume, the opportunity of making each other's acquaintance; and so large a number have availed themselves of this mode of communication, that a mass of FACTS in relation to the business of agriculture has been accumulated, which each individual can use as his particular circumstances or condition may render expedient. We cannot doubt that a conviction of the advantages arising from this interchange of ideas, together with a desire to obtain useful information, will induce a general continuance of patronage to our work; and that our next volume will even receive an increased number of subscribers.

Besides the hundreds of able correspondents directly connected with the Cultivator, our means for receiving intelligence of interest and value to the farmer, are very extensive. In addition to all the approved standard works on husbandry and rural economy in our possession, we have, regularly, the principal European periodicals which are devoted to those subjects,—including those of Great Britain, France, and Germany; and in the pursuit of our grand object—the promotion of the happiness of our countrymen by the improvement of the "soil and the mind"—we shall avail ourselves, as we have heretofore done, of all these and other sources of knowledge.

We have made arrangements for some improvements for our next volume, which cannot fail to be satisfactory to our readers. It will be printed on type entirely new and of beautiful form, procured expressly for the purpose. In the way of illustrations, also, we design giving something which we think will be highly gratifying. Our first number will be accompanied by a beautiful portrait of a Galloway bull, one of the very best of its kind that has yet appeared. Other engravings, pertaining to various subjects, will appear from time to time. In short, we are determined that the acknowledged standing and character of the work shall be sustained; and in saying this, we believe we offer all the pledge which will be required.

We would respectfully invite the agents, and all friends of our work, to continue their efforts for its circulation. By comparing the various agricultural publications, it will be seen that the quantity, (to say nothing of the quality,) of the matter furnished in proportion to the price asked, is much in favor of the Cultivator. When this, the liberal commissions we offer, and all other advantages are taken into consideration, we think they cannot fail to secure that share of patronage to which the work, from its actual and comparative value, is entitled.

☞ We publish this month a List of Agents, including, so far as we could complete the list, all those who have done us the favor to act as Agents the present year. That the list is imperfect we are aware, but we hope no one will discontinue his efforts to promote the circulation of "The Cultivator," even if he fails to find his name among the agents. We shall also gladly avail ourselves of the aid of any of our present subscribers, who feel disposed to make an effort to form clubs of seven or fifteen. In this way they might materially increase the circulation of our paper, as it is believed that there are but few neighborhoods where such clubs might not be formed by a little exertion on the part of any of our present subscribers.

☞ We shall be glad to have all the agents for "The Cultivator," also receive subscriptions for "THE HORTICULTURIST." The price of the Horticulturist is \$3 per year, from which a discount of 20 per cent. (60 cents on each copy,) will be made to agents.

☞ We send with this number prospectuses and showbills for next year, to all our agents, who will oblige us by circulating them as soon as convenient.

THE HORTICULTURIST,
AND
JOURNAL OF RURAL ART AND RURAL TASTE.

EDITED BY A. J. DOWNING,

Author of "Landscape Gardening," "Designs for Cottage Residences," "Fruits and Fruit Trees of America," etc., etc.,

MOST of our readers are aware that the publisher of The Cultivator, issued the first number of the above work, on the first of July last, since which time it has been regularly issued on the first of each month, each number consisting of 48 pages, large octavo, printed on fine paper in the best style, accompanied by a beautiful frontispiece, and illustrated by numerous engravings, making it altogether one of the most elegant and useful magazines yet issued in our country. The favorable manner in which it has been received by the public, has been most gratifying both to the Editor and Publisher. The liberal patronage which has already been extended to it, (its subscription already amounting to near 2000,) has secured to it a permanent place among our periodicals; and the public may rest assured that the work will be a permanent one, to which the labors of Mr. DOWNING, as its Editor, will be thoroughly devoted.

THE HORTICULTURIST is devoted,

I. To GARDENING, in a thoroughly practical as well as scientific sense.

II. To the DESCRIPTION and CULTIVATION of Fruit Trees.

III. To Gardening as an ART OF TASTE, embracing essays, hints and designs on Ornamental and Landscape Gardening.

IV. To RURAL ARCHITECTURE, including Designs for Rural Cottages and Villas, Farm-Houses, Gates, Lodges, Ice-Houses, Vineries, &c., &c.

This periodical may, indeed, be considered a continuation of the various works on Rural subjects, by its editor, which have already been so favorably received by the public. It will now be his object to assist as far as possible, in giving additional impulse to the progress of Horticulture, and the tasteful in rural life; subjects at this time so largely occupying all those interested in country pursuits.

To show the favorable manner in which this magazine has been received, we annex a few of the numerous notices which it has received from the press:—

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NOTICES OF "THE HORTICULTURIST."

The editor, Mr. A. J. DOWNING, of Newburgh, is probably better qualified to conduct such a work than any other man in the country. The number before us contains a great number of articles of great practical value to every gardener and horticulturist in the country. The current number contains 12 illustrations.—*Hudson Republican*.

When it is said that Mr. A. J. DOWNING, the author of Landscape Gardening, etc., etc., is the editor, we think its value is more plainly shown to any who have read his works, than words of ours could do it.—*Cleveland Herald*.

The number before us is rich in instructive matter to the gardener and lover of fruit. There is not a man in this country who has done so much to increase the tasteful appearance and substantial comfort of country residences as the editor, Mr. DOWNING.—*Barre Gaz.*

We have received Nos. 1, 2, and 3, of this excellent and useful work, which we strongly recommend to the notice of all who pay any attention to Gardening, or are attached to rural pursuits, either for amusement or for profit.—*Montreal Gazette*.

The first number of this new journal has reached us—a neat large octavo of fifty-six pages, beautifully printed on very superior paper. It has been anxiously expected, and certainly, has not disappointed those expectations—each and every article in this first number being of absorbing interest. Every one at all ambitious of keeping pace with the improvements of the day in

gardening, should subscribe for it.—*New Orleans Com. Times*.

The first two numbers of this new work by Mr. DOWNING have been received. We have found much pleasure in assuring ourselves of just what we anticipated of the work in such hands, a desideratum for the advancing taste of the country in horticulture and rural architecture, to which the work is chiefly to be devoted. We can promise for the work that it will be not only scientific but entirely practical. No person, perhaps, combines more harmoniously the two, than the originator of this new candidate to popular favor. Mr. DOWNING has been for years one of our most successful nurserymen, as his beautiful grounds at Newburgh always testify, and no author by his pen has done more to awaken and cultivate good taste in gardening and architecture.—*New-York Evangelist*.

"THE HORTICULTURIST."—Mr. Cooper, in the last of the series of the Littlepage Manuscripts, correctly remarks that, "notwithstanding the cheapness of land among us, there has been very little progress made in the art of landscape gardening; and if we have anything like park scenery, it is far more owing to the gifts of a bountiful nature than to any of the suggestions of art. Thanks to the cultivated taste of DOWNING, as well as to his well-directed labors, this reproach is likely to be soon removed, and country life will acquire this pleasure among the many others that are so peculiarly its own." We quote this well deserved tribute to the genius and labors of our friend DOWNING, less to praise the art which it discusses or repeat our good opinion of the services it eulogizes, than to remind our readers that a new publication entitled THE HORTICULTURIST has been commenced at Albany by Mr. TUCKER, of the Cultivator, under the editorial auspices of the well known proprietor of the Highland Gardens, and author of popular works on Landscape Gardening, Cottage Designs, Fruit and Fruit Culture, &c., A. J. DOWNING, Esq. The first number commences with July, and we need scarcely say it is in keeping with the editor's other productions. It is to be issued monthly, and may be had in this city of L. Willard, of the News Depot.—*Northern Budget*.

The Horticulturist is well calculated to assume a high rank, and become a very valuable standard work, conducing largely to improvements in horticulture and rural taste. We hail it with great pleasure, as we have no valuable work of this character in this section, and perhaps none in the country. The number before us contains a great variety; it is very instructive and deeply interesting. Such is the improving spirit and taste of the present day, that this work will be duly appreciated, and meet with a very favorable reception.—*Boston Cultivator*.

Its object is to promote rural taste and rural art, not merely in field and garden, but in all that gives character and pleasure to a country residence. The work is conducted by Mr. A. J. DOWNING, a gentleman who has distinguished himself by an octavo volume on Landscape Gardening, Designs for Cottage Residences, &c.; and he seems now to address himself with great ability and earnestness to the good work of making country life agreeable and tasteful, as well as healthful. We hope this magazine will be extensively patronized. It must be exceedingly pleasing and useful.—*Phil. U. S. Gazette*.

Mr. DOWNING unites in a rare degree, qualities as a writer and practical designer and horticulturist, which cannot fail at once to give character and value to this new periodical, and to ensure a favorable reception from an intelligent public. It is a gratifying evidence of the advance of taste and art in rural life, that publications of this character are appreciated—results to which Mr. DOWNING's clever works have largely contributed.—*Albany Argus*.

THE OLDEST OF ALL ALMANACS.—There is in the British Museum an almanac, written on papyrus, which wants but a little of being 3,000 years old.

HOW SHALL WE IMPROVE?

.....
"The public expect of us vigorous efforts to improve and elevate our agriculture—and we should be untrue to ourselves, did we not endeavor to satisfy every reasonable expectation."

This is the language of the late president of the New-York State Agricultural Society, in his annual address delivered in January last. The sentiment is correct, but the question is, has every reasonable expectation been satisfied? During the five or six years that the society has been in operation, has it as yet pursued or devised any plan by which a good and fair analysis of the various crops grown in this State would be put into the hands of every farmer in such a shape that he who farms may read and understand? It is a fact, that in the five volumes of transactions already published, there are many valuable and highly interesting papers; yet, it is equally a fact, that out of the whole mass of agricultural writers, there is scarcely ever a communication sent to an agricultural paper, that refers to a single idea or suggestion which has arisen from the perusal of these papers. Why is this? Is it not partly because there is no system fixed on as permanent, for the arrangement of the various papers of which they consist? And do not the volumes fall into the hands of too few persons who are actually the working practical farmers? Does it not, also, seem probable, that were the prize essays made a small handy pamphlet or volume, unconnected with the transactions, they would be much more read, much more consulted, and consequently more readily aid to "improve and elevate our agriculture?"

Again, there are but few of the papers, I am inclined to think, that have that *utilitarian* character that it is expected such an eminent society should present to the agricultural world. To explain what I mean, I must refer to the proceedings of a like society, the Transactions of the Highland Society of Scotland. These contain many able essays, which have been elicited by high premiums. I need go no further than to mention the essay on the analysis of the oat, by J. P. Norton. No one can read this essay without perceiving that the premium, high as it was, about 250 dollars, would hardly remunerate the author for the time, labor, and expense that he was at, for a period of some twelve months, in preparing his paper; yet this, with the exception of a well-deserved reputation, was all the reward that the author had for a paper that contains all that can, as I believe, be known of the oat. Yet how many will gladly avail themselves of the knowledge of facts hitherto unknown, and now contained in that paper, to increase the value of a standard crop, and one which occurs in nearly all our systems of rotation; how many will reap the benefit of his skilful chemical manipulation, acquired only after long practice, of his patient investigations, and of his laborious researches, for the mere trouble of reading some twenty-five or thirty pages? Essays like this stamp a character on a society, and give its sayings and doings a standing that nothing else will.

An especial and prominent aid, both to the funds and to the premium list, I would now ask leave to point out to the executive board of the N. Y. Society. I have never seen it as yet suggested, nor even spoken of, and should you deem it feasible, I hope the project will receive that aid and support not only from you, but from the whole agricultural press, of which it appears to me well deserving. It is this: That the N. Y. State Society should procure from the Legislature, at the next session, authority to print a certain number for the use of the society, or to procure stereotype plates of the volumes of the Natural History of the State, containing the Agricultural Report now in course of preparation by Dr. Emmons. Here is an opportunity to diffuse, cheaply among the farmers of this State, accurate scientific information, combined with practical knowledge, in the shape of premiums, that will never occur again. The State is bound to print it at any rate, and while the ponderous tomes on Geology, Mineralogy, Botany, Zoology, Conchology, Herpetology, and Palæontology

have been paid for and printed by the State, and are without doubt of service to develop the mining, and manufacturing, and trading interests, to the farmer they are of little importance; it is the *Agricultural Report* that will render these of use to the farmer; it is through it that he will appreciate them; and I cannot too highly commend to you and to your readers, and especially to the Executive Board of the N. Y. State Society, the importance of speedily bringing this matter to the notice of the Legislature. The people of the State, and especially the farmers, from whom, as a matter of course, the greater share comes, have cheerfully paid enormous sums for the knowledge contained in the Natural History of the State. I consider it, therefore, the right of the agricultural community to demand that at least, since they have paid so much for science, a slight attempt at a return should be made on the score of utility.

It is also an excellent investment for a part of the funds of the society, as it will give to them a store of premium material far more valuable than the richest medals or pieces of plate that genius, art, and taste combined, can possibly devise, and one which the intelligent farmers of our State, as I believe, will more eagerly strive after and hold in far higher esteem when gained.

When it is known that but three thousand copies of this work is to be printed, that this single edition will probably have to last the State for many years, as it is not likely that any publisher would undertake to publish an edition of it in the hopes of being remunerated; knowing that many of those on whom he would probably rely, in other cases, for the sale of such a work, had been supplied, and that this would be a cheap, if not the most economical and most useful mode of spreading the information contained, I, for one, hope that some action will be taken right speedily on the subject.

J.

Bethlehem, Nov., 1846.

SALT AS MANURE.

.....

MR. TUCKER—Having read several articles recommending the use of salt as a manure, I was last spring induced to procure a quantity for the purpose of testing its value.

On the 7th of May, having spread about 30 loads of stable manure on $1\frac{1}{2}$ acres of sod, turned over in April, I sowed four bushels of western salt on a little more than two-thirds of the ground, leaving a strip through the middle unsalted. The whole was then thoroughly harrowed, and the next day planted with corn. This field lies on the left bank of the Kinderhook creek; the eastern part is a light yellow loam; the western is a gravelly knoll; while the middle is alluvial—composed of sand and mud washed from the river. The salt was sown so as to give each of the different soils a fair trial. The corn was a good crop, producing (with the exception of a small portion shaded by trees,) at least 50 bushels to the acre. It was considerably smaller on a part of the alluvial land to which no manure was applied; but from first to last, *no difference* could be perceived between the salted and unsalted portions of the field, either in respect to the growth of the corn, or to the quantity destroyed by the cut and wire worms, which, however, was not very great in any part. On another field, with a slaty soil, I sowed a bushel of salt, at the rate of about five bushels to the acre, but could see no effect on the corn. The same result followed its application to the potato crop. Four and a half bushels were sown on an acre, leaving a strip on each side unsalted. The vines died in July and August, and the crop of course was light; but few decayed potatoes were seen, except on some low ground. My brother used salt on both corn and potatoes without perceiving any effect. If salt is so valuable as some have supposed, (and of its good effects in some instances there can be no doubt,) what was the cause of failure in the cases stated? Was it in the soil, season, mode of application, or in the quantity applied? Can you give any light on the subject? S. P. ROLLO.

SUMAC.

A correspondent at Beaufort, S. C., wishes information in reference to sumac—what species are valuable, and for what purposes, and the manner of preparing the article for market.

The plant alluded to belongs to the genus *Rhus*, several species of which are used in the arts and for medicine. In BROWNE'S late work, "THE TREES OF AMERICA," it is said—"The species most worthy of note, and which have been cultivated for ornament, or have been applied to useful purposes in the arts, are *Rhus typhina*, *venenata*, *aromatica*, and *copellina*, for ornament; and the *Rhus radicans*, for medicine, in North America; the *Rhus cotinus* and *coriaria*, for tanning and dyeing, of the shores of the Mediterranean; and the *Rhus vernicifera*, or varnish-producing sumac, of Japan and Nepal."

We believe the Venetian sumac, *R. cotinus*, is considered the most valuable for tanning and dyeing. This species, according to authors, is found in western Asia, southern Europe, and in some parts of North America. Mr. BROWNE says,—"in a wild state, it is seldom found higher than five or six feet, but when cultivated, often attains more than double that height." * * * "It is easily distinguished from all other species of *rhus* by its simple obovate, smooth, stiff, lucid, green leaves, rounded at their points, and supported by long foot-stalks, which do not fall till they are killed by frost, so that the plant is almost sub-evergreen." He states that it was introduced into this country by the late WM. PRINCE, of Flushing, N. Y., about the year 1790, and has been cultivated in various parts. The soil and culture best suited to the shrub, are thus described in Mr. BROWNE'S work. "It prospers best in a dry loam, though it will grow well in any common garden soil. It may be propagated by seeds, or by pegging down the branches flat to the ground, in the spring, and strewing earth over them. Young shoots will rise and take root at the base, which may be severed from the parent stock in autumn, and planted in pots, or in the site where they are to remain. As an ornamental shrub, this species deserves a place in every garden and collection where there is room for it to extend itself. And there is but little doubt but it might be profitably cultivated in many parts of the United States, for the purposes of tanning and dyeing."

The *Rhus typhina*, or what is called Virginian sumac, is a species of which, it is said, there are many varieties in North America. It is described in "The Trees of America" as attaining "a height of ten to twenty-five feet, although under some circumstances it dwindles down to a mere shrub from ten to two feet in height." Like others of the genus, this species is said to be easily propagated by seeds or by cuttings of the roots. A good soil for the culture of Indian corn, is said to be the best for this shrub. "The wood and leaves," says BROWNE, "are used in tanning the finer kinds of leather, and the roots are prescribed as a febrifugal medicine. The branches, boiled with the berries, afford a black, ink-like tincture; and the berries may be employed alone for dyeing red."

The *Rhus venenata*, or Poisonous sumac, is indigenous to North America, and is found in swampy places in all parts of the United States. It is a very poisonous shrub to most persons, though some, from a peculiar constitution, are not affected by it. BROWNE says—"Every part of this shrub, even when reduced to charcoal, is in a high degree poisonous to most persons, either by touching or smelling any part of it." The poison is stated to be sometimes fatal to bees, and an instance is related of a swarm having alighted on a branch, which after being hived, died in the course of a few hours, and were swollen to double their natural size. In the easterly part of Massachusetts, this plant is popularly known under the name of "dog wood," or "poison dog wood." The writer recollects an instance of a family in that section having been poisoned to a dangerous degree by smoke from a fire made of this shrub. On account of its poisonous nature it is seldom used in the arts.

Our acquaintance with the mode of preparing sumac for market is not sufficient to enable us to give particular directions. We believe the plant is usually cut while in a soft or tender state, with a scythe—is carefully dried till the leaves can be pounded off, when it is threshed with flails, the stem, and coarse parts raked out, and the leaves packed in barrels and sold. When it is wished to convert natural plantations into a state in which they can be used, we should suppose it would be best to cut off the old growth, close and clean, in order to obtain a thick stand of young, leafy plants, which can be readily cut and managed.

Since the above was written, we have received the following remarks in relation to the subject, from Prof. JAMES HALL, of this city, for which he has our thanks.

There are several species of this shrub or tree, belonging to the genus *Rhus*, which are useful in the arts. In the United States we have at least eight native species; and one exotic species, cultivated in our gardens, and known as Aaron's beard, or false fringe tree. Among the native species we have two in the northern states which are exceedingly poisonous—the *Rhus vernix*, known in New England as poison dogwood, and in New-York as poison elder, and poison sumac, and the *Rhus toxicodendron*, which, in one of its varieties, is a climbing vine, and is known as the poison ivy.

This genus belongs to the order Anacardiaceae, one character of which is that it consists of trees or shrubs, with a resinous, gummy, caustic, or milky juice, and this character is true of all the sumacs. In the poisonous species, this resinous or gummy juice contains the noxious matter.

There are also several other species of *Rhus*, which are of much use in the arts, as in tanning and coloring. Those in the United States which are valuable in these arts, are the *Rhus typhina* and *Rhus glabra*. The leaves of both these species abound in tannic acid, and are much used in tanning morocco, and other light colored leathers.

The leaves and petioles, when dried and powdered, or macerated, when fresh, are much used in coloring, and in many instances have superceded the use of nut-galls, being preferable in many colors. The fruit, which is of a red or purple color, contains much malic acid, or an acid bimaleate of lime, and is often used in coloring, both for its tannin and for its acid properties, in changing vegetable blues to reds.

The species used in Europe, both for tanning and coloring, are the *Rhus coriaria*, and the *Rhus cotinus*, the latter being the species cultivated in our gardens, before alluded to.

In a late English treatise upon dyeing, republished by Harper & Brothers, New-York, sumac is placed among the coloring substances, and its uses pointed out. Of the two kinds mentioned, the author remarks, that "the *Rhus coriaria* is the best. With peroxide of iron, as a mordant, it imparts a variety of shades, from slate color to black. In calico printing, sumac affords, with a mordant of tin, a yellow color; and with sulphate of zinc, a brownish yellow. A decoction of sumac reddens litmus paper strongly; gives white flocks with the proto-muriate of tin; pale yellow flocks with alum; blue flocks with red sulphate of iron, with an abundant precipitate." Further information regarding the use of sumac may be found in the treatise above cited, on pages 291 and 292.

The American species previously named, possess the qualities required both for tanning and for dyeing. The *Rhus typhina* grows in rocky and gravelly soils, frequently along the margins of ledges of granite, and about old fences. The *Rhus glabra* often takes possession of barren, waste fields, when the soil is stony, and abounds in barren stoney soils. I am not aware of any attempts made to cultivate it, but it could easily be produced in large quantities in waste fields and barren places, which now produce no valuable shrub or tree. The stoney and gravelly soils of New England, and the

waste, barren lands of some of the southern states, would produce this shrub in great abundance.

It is easily cultivated, and requires little care, and we should suppose would prove profitable, since nut-galls form an important item among our imports.

The first species usually attains a height of 8 to 15 feet, and rarely forms a tree of 20 feet high and six or eight inches in diameter. The second species is usually from 5 to 12 feet high, being usually a little less than the last species, and furnishing an abundance of fruit and foliage when four feet high. These shrubs, with even tolerable care from being broken down, are rapid growers, making several feet of wood during a single season, though growing slower as they advance in age. Young plants grow with little care, and either seeds or the young shrubs can be readily obtained.

OPERATION OF PLASTER.

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MR. TUCKER—There seems to be a great diversity of opinion as to the reason why plaster or gypsum fails to benefit such a large portion of our Atlantic coast, Long Island, and New-Jersey, particularly. Mr. Ruffin of Virginia, in a work on Calcareous Manures, advances a theory based on his experience as a practical farmer, that appears to me to be more satisfactory than any other I have seen, and I am somewhat surprised that his theory has never found its way into our northern agricultural journals.

I made a visit to Virginia last winter, preparatory to removing there, and while there I made particular inquiries in relation to the extensive marl formation which underlays nearly the whole eastern portion of the state, below the falls of the rivers, and its effects upon the soil. I found it to be extensively and profitably used, and producing important and permanent changes in the soil; so much so, that clover cannot be made to grow at all until marl, or its equivalent, lime, is applied. The marl contains from 30 to 80 per cent. lime, which is the principal if not the only fertilizer contained in its composition. I inquired how plaster succeeded on clover, and the almost invariable reply was, it does no good whatever until the land is marled or limed. I inquired the reason of this, and was referred to Mr. Ruffin's work on Calcareous Manures. I there found what appeared to me to be a very satisfactory reason, and I will give you a brief abstract. He says that the most of the soils of eastern Virginia, were found upon analysis, to contain but a slight trace of calcareous matter, and with the exception of the land along the margins of the rivers, which he terms neutral soils, he calls them all acid soils; and the presence of sorrel on the land he considers an indication of acid soils. Sorrel grows abundantly on all land which he terms acid. Oxalic acid is the acid of sorrel. Now, sowing on plaster in the usual quantity, that being a sulphate of lime, the oxalic acid has a strong chemical affinity for the lime; the lime leaves its combination with the sulphur, and combines with the oxalic acid, and forms an oxalate of lime, and sets the sulphur free to combine with iron or any other ingredient that it can find. Apply a good dressing of marl or lime, and it combines with the acid and neutralizes or destroys it, and as a proof of this, sorrel is no longer found. Plaster applied then is left free to act, and produces the most satisfactory results, frequently doubling the crop.

Long Island and New-Jersey have soils somewhat similar to Virginia. I can speak more confidently of Long Island, as that is my place of residence; its soils produce sorrel plentifully. Lime has been used but little, and in many cases with no perceptible effect, and plaster, with a few isolated exceptions, has totally failed. I hope that some of your Long Island and other readers who are similarly situated, will make the experiment, and see if like causes will produce like effects. The experiment need not cost them but little money or labor.

While on a recent visit to Dutchess Co., a friend informed me that the prevailing opinion in that county

was, that plaster applied to one field, injured an unplastered field adjoining, as much as it benefitted the one that it was applied to, and that some went so far as to say that if a piece of woodland was left amidst cleared land, and that cleared land plastered, the timber commenced decaying and dying. He told me of an instance that went strongly to prove the truth of that opinion. An old farmer had a very fine meadow, in a creek bottom. He commenced plastering his upland lying around, and adjoining it. His meadow, which had never before failed to produce luxurious crops of grass, began to fail, and continued to do so until it was hardly worth mowing. He then commenced plastering it, and its ancient fertility was at once restored. Now what can be the cause of that? Perhaps our chemists are the most proper persons to judge; but I can give my own opinions, as they do not cost much. The idea at once occurred to me that it might be caused by the absorption of ammonia from the surrounding atmosphere, by the plaster, (as ammonia and sulphuric acid have a strong affinity for each other,) that the unplastered land was deprived of its due share from that source, as plants are said to derive a large share of their ammonia from the atmosphere. Perhaps some of your able correspondents can enlighten us as to the cause of it.

G. P. LEWIS.

Huntington, L. I., Oct. 14th, 1846.

PLANTATIONS OF PINES.

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THERE are quite extensive tracts of country, especially along the sea-board, which now lie nearly in a state of barrenness, that might be made to yield a tolerable income, if planted in trees. It might be difficult to make hard-wood trees flourish on these light lands, but pines would generally grow without much trouble. In the easterly part of Massachusetts, many plantations of pine have been formed on old lands, which, though formerly cultivated, had become wholly worthless for agricultural purposes. The Barnstable County, (Mass.) Agricultural Society, lately awarded a premium to Mr. AMOS OTIS, of Barnstable, for two plantations of pines. Believing that his account of the mode of planting, &c., will be valuable to others, we give from the *Sandwich Observer*, the substance of a paper submitted to the society mentioned. The Pitch pine, was the kind chosen in this case, but the process of cultivation would probably answer equally well for White pine. It will be noticed that the value of the land is stated to have been only from one dollar to two dollars per acre, before being planted with trees; and that after an outlay in planting of only three dollars per acre, it is made to pay an annual income of one dollar per acre, for twenty-seven years.

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The two lots of pines which I offer for examination, are situate in the East Parish in Barnstable, and contain, one two acres, and the other seventeen. The surface is uneven, and covered with moss; and excepting a few acres has not been cultivated for many years. The soil is mostly a gravelly loam, and is not what is generally called a pine soil. The trees on the north side of the two acre lot, were planted in April, 1833, and now average thirteen feet in height, and measure one foot from the ground, four and one-half inches in diameter. Those on the south side were planted the next year, and average twelve feet in height and four inches in diameter. The seventeen acre lot was planted in the years 1840, '41, and '42. Nearly all the trees are of the last planting, and they average nearly four feet in height.

The exact number of trees on each acre I cannot state; but I estimate that the average is much greater than is required by the rules of the society. There are some open places, but on most of the ground there are as many trees as it would be profitable to allow to remain. On one acre where the soil is much better than the rest, and in the bottoms, there are no trees. The pitch pine will not grow in still green sward and where the surface is a loose barren sand it does not flourish.

Seed. The last of October is the best time to gather pine balls. Select those that are of the growth of the present year, spread them on a tight floor—a chamber having windows opening to the south is a desirable place—and before spring the action of the sun and of frost, will open most of the cones, and the seed will drop out. The cones that remain closed may be put into pans and placed in a warm oven to open. Before planting, the wings should be rubbed off the seed, and all extraneous matter carefully winnowed out. A bushel of good balls will yield three pints of cleaned seed, which is a sufficient quantity for three acres.

Cost of Planting.—Previous to 1842, I planted by plowing furrows, eight feet apart, lengthwise of the field, and dropping and covering the seed by hand, in the bottom of the furrows. Some little was planted with a hoe, without first plowing. Both of these methods are too expensive, if a large quantity of land is to be planted. In the spring of 1842, I had a machine constructed, on the principle of a corn planter, with which a man and a horse can plant six acres in a day. The machine is simple in its construction, and cost less than five dollars. It operates well in all soils where it is advisable to plant the Pitch Pine. The cost of the seed and planting with the machine is less than one dollar per acre.

Growth, Profit, &c.—The first three or four years, the growth of the Pitch Pine is slow; but when it is planted or comes up in old fields, its increase in size for twenty years, will average for each year one foot in height, and one third of an inch in diameter. The value of land suitable for planting the Pitch Pine is not usually estimated at over two dollars per acre, and it is frequently sold for one. The cost of an acre planted, will not on an average exceed three dollars. Where wood is worth three dollars a cord standing, if no accident happens to the pines, the value of the annual growth for twenty-seven years may be safely estimated at one dollar for each acre. This rule will not apply to pine woodlands, for the growth there is not half so rapid as in old fields.

But there are drawbacks that must be taken into the account before the balance of the *profit and loss* sheet is struck. Interest on the capital invested, the risk of fire and the greater risk of destruction from the ravages of the speckled caterpillar, or pine tree worm. It is only a few years since these pests first made their appearance in this region. Their ravages are principally confined to pines growing on lands formerly cultivated. Wherever they appear, there are myriads of them. They completely cover the branches and in a few days strip the tree of all its foliage. Their name is legion. Very few trees survive their attack, and if they live, their existence is sickly and their growth stunted. Their ravages have thus far been confined to the light sandy soils. Last year almost every tree on a twelve acre lot of mine was destroyed by this caterpillar. Others suffered also. This year they have again made their appearance, and in some places the ground and trees are literally alive with them. If their ravages are not stayed, it is not advisable for any one to plant the Pitch Pine, particularly on light soils and in the vicinity of places where the caterpillar has already made its appearance. However there is no reason to be discouraged; if one species of trees do not succeed, we can try another. The curse of insects is chargeable to the murderous sportsman. Birds were appointed to hold the insect tribes in check, and the destruction of the one is the increase of the other. But, gentlemen, fear of the ravages of insects should deter no one in his attempts to cultivate trees. With all its drawbacks, I am satisfied that it is more profitable than three-fourths of the crops now raised by the farmers. Nearly two centuries ago, at a time when Cape Cod was covered almost by one unbroken forest, our ancestors, year succeeding year, in their town meetings, passed votes offering encouragements for the growth of timber, and imposing fines and penalties on him who should wantonly destroy a single tree. Then the value of timber scarcely exceeded the cost of carrying it to market; now the value is tripled; yet till very recently, no one

has thought it a public duty to encourage the growth, or to adopt measures for its preservation. We have paid bounties for the destruction of birds—only another form for granting gratuities for the propagation of worms and noxious insects,—we have converted our woodlands into pastures; and all that the cattle could not destroy man has deemed it meritorious to cut down and uproot;—nothing has been left for beauty or shade, and nothing to break the force of the sweeping gale. But there is beginning to be developed in this community, another and a better feeling. It is perceived in the cultivation of trees; pleasure and utility may be combined; that our worn out and desolate hills may be covered with verdant and beautiful forests; that our village streets may be adorned with shady rows; and that our gardens and fields may be studded with fruit trees, without diminishing the pasturage or fertility of the farm. One object of the Agricultural Society, is to foster and encourage this feeling, and whatever aid I can render will be most cheerfully contributed.

AMOS OTIS.

Yarmouth Port, Oct. 6, 1846.

BLACK WEEVIL—*Curculio granaria*, Linn.

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THIS insect, called by some "black weevil," Dr. HARRIS describes as being, in its perfected state, a slender beetle, of a pitchy red color, about one eighth of an inch long, with a slender snout slightly bent downwards, a coarsely punctured and very long thorax, constituting almost one-half the length of the whole body, and wing-covers that are furrowed, and do not entirely cover the tip of the abdomen. This little insect, both in the beetle and grub state, devours stored wheat and other grains, and often commits much havoc in granaries and brew-houses. Its powers of multiplication are very great, for it is stated that a single pair of these destroyers may produce above six thousand descendants in one year. The female deposits her eggs upon the wheat after it is housed, and the young grubs immediately burrow into the wheat, each individual occupying alone a single grain, the substance of which it devours so as to leave nothing but the hull; and this destruction goes on within, while no external appearance leads to its discovery, and the loss of weight is the only evidence of the mischief that has been done to the grain.

"In due time the grubs undergo their transformation, and come out of the hulls in the beetle state to lay their eggs for another brood. These insects are effectually destroyed by kiln-drying the wheat; and grain that is kept cool, well ventilated, and is frequently moved, is said to be exempt from attack."

Mr. CLARK RICH, of Shoreham, Vt., gives us an account of the manner in which this insect attacked some stored grain in his neighborhood, and the means he took to destroy it. He states that the insect first made its appearance last fall, (1845,) in some boxes of wheat which had been standing for some time undisturbed in a mill. In the following spring, the insect became troublesome. It had been previously wholly unknown in that quarter. The insects soon became so numerous, that grinding was suspended for a time. He made experiments to kill the insects with smoke. He found he could kill them with brimstone smoke, by placing them in the farther end of a stove pipe, though so far from the fire as not to be hurt by the heat. He could also kill them in the same situation by tobacco smoke. He next tried to destroy the insects by fumigation. Having made the mill as tight as he could, he burnt a hundred pounds of brimstone in the course of twelve hours. After this, the insects appeared torpid, but on being taken to the air soon revived. He then tried tobacco, and burned about 150 lbs. This, to appearance, did not disturb them. From these unfavorable results, he deemed it of no use to continue the process any longer, though he thinks that in a brick or stone building, with a tinued roof, every insect or other animal might be killed by brimstone smoke.

He then applied hot water, and gave the mill a thorough scalding, using all the water that could be heated

in three large kettles during 2½ days. To prevent future increase, he had all the hollow places to be got at filled with lime; and the small holes and cracks with mortar, and the walls were white-washed.

Soon after this, the mill was put in operation; an insect was only seen occasionally; but in the course of three weeks, there was a considerable increase; though they have since remained stationary, and are not so plenty as to drive away customers. He says no insects were to be found in the smut room, or the machinery room, where it is damp.

Mr. R. says he has heard that this or a similar insect is at times troublesome at Troy, but that he found none in a mill he examined at Hartford, Ct., and none at Rochester, and several other places along the Erie canal, except at one mill in Lockport, and but few there. He feels satisfied that it is not destined to be as troublesome in this region as was at first supposed.

SELECTING FINE FRUIT.

THERE are several qualities to be taken into consideration, in deciding what fruits are most worthy of cultivation in the orchard and garden. Excellence of flavor is of course the first and all-important requisite, while productiveness, uniformity in quality, a fair surface, free and vigorous growth, and even large size and handsome appearance, are all to be taken into account. A very few fruits have all these together; in such cases the task of selection is not difficult. But such instances being extremely rare, it becomes necessary to choose by balancing advantages and defects.

No fruit of inferior *flavor* is ever to be regarded as first rate. A very prevalent disposition is to judge mainly by external appearance. Hence the Twenty Ounce apple, the Alexander, Maiden's Blush, and Red Astrachan, stand quite as high in reputation as other varieties of decidedly finer quality. Yet they are not all to be summarily rejected. The Red Astrachan is a free growing tree, a good bearer, quite early, of large size, and great beauty of appearance, qualities which, in some degree, at least, counterbalance its somewhat coarse texture and austere flavor. The Alexander is also of free growth, and though of only second rate richness in flavor, is always fair, and a fine bearer. The Maiden's Blush is a most abundant bearer, and the fruit uniformly fair and handsome, and of delicate texture, but it is sadly deficient in richness of flavor—so much so, that even swine, who soon become good judges, seem to hold it in decided contempt, while they can get other good varieties by its side. The Twenty Ounce apple has been highly praised at Boston; but independent of large and fine appearance, and great productiveness, it appears to possess but little merit. Even for cooking, it is inferior, unless an artificial flavor is given to it by sugar and spices. The disposition to admire and extol large and handsome fruit is exhibited among other kinds. If the Bolmar plum were no larger than a Green Gage, it would be but little known; the large Red Cheek Melacoton and Lemon Cling, have depended for much of their celebrity on their size; and even Crawford's Early would be a little curtailed in its reputation for quality, if it were no larger than an Early Ann.

On the other hand, the Seckel pear, the richest of all pears, is of dull appearance, small size, and slow growth—the latter quality however, securing it from the fire-blight.* Buffington's Early has scarcely an equal among early apples, in flavor and texture; but it never bears good crops. The Sine Qua Non apple, and the Early Tillotson peach are excellent bearers, and of the best flavor, but the young trees in the nursery are of slow and scrubby growth. Hence, notwithstanding their great value, they will always be unpopular among

* It is not intended here to say that rapid growth alone is always most liable to the attacks of this malady. Some varieties ripen their wood early, which being also of compact texture, they nearly always escape. Others, though perhaps less thrifty, have spongy or succulent wood, ripening badly; and they frequently suffer

nurserymen, though they grow freely when they become larger.* Nor are nurserymen wholly to blame for this. For as buyers of fruit usually prefer specimens of showy appearance; so buyers of trees commonly show most respect to those of large and handsome growth merely.

The number of varieties of fair or handsome appearance, free growth, and of first rate quality, is very small. It includes the Yellow Harvest, Late Strawberry, and Gravenstein apples; the Madeleine, Bloodgood, Virgalieu, and perhaps the Bartlett pear; Huling's superb plum; and a part of the early, and most of the medium and late peaches, best known for their excellent qualities.

It is a little singular that some varieties of slow growth in the nursery rows, afterwards become large trees in the orchard, as the Esopus Spitzenburgh and Fall Pippin. On the other hand, some of the most handsome, straight, and rapidly growing sorts while young, always remain rather small trees, as the Late Strawberry, and Tallman Sweeting.

The object, principally, of these remarks, is to direct more attention to securing fine flavor and quality, in making selections; and to discourage the common error, of looking too much at large size and showy appearance. Until this object is attained, fruit culture must always be at a low ebb; we shall never see fine fruit gardens so long as a Pound-Sweeting or a Twenty-Ounce is preferred to a Swaar or a Rambo; or a pumpkin or a mammoth squash to a Green Gage, or a Seckel.

THE POTATO.

MR. EDITOR—I send you a copy of the description of the potato, as given by Gerard, in 1597, in his own language, the orthography only corrected.

How the Indians became possessed of the potato, it is impossible to tell. Probably, like Indian corn, it was brought from a tropical climate by degrees, from tribe to tribe. Its native country is Peru, in which country it is now to be found growing wild on table lands, and perhaps in other parts of Central America.

Yours, &c., JOSEPH BRECK,
Boston, Oct. 26, 1846.

[From Gerard's Herbal, first published in London, in 1597, afterwards enlarged and improved, by Thomas Johnson, and published in London, 1633.]

OF POTATOES OF VIRGINIA.

The Description.

Virginia Potato hath many hollow flexible branches trailing upon the ground, three square, uneven, knotted or kneed in sundry places at certain distances, from the which knots cometh forth one great leaf made of divers leaves, some smaller and others greater, set together upon a fat middle rib by couples, of a swart green color, tending to redness; the whole leaf resembling those of the Winter Cresses, but much longer; in taste at the first like grass, but afterwards sharp and nipping the tongue. From the bosom of which leaves come forth long, round, slender foot stalks, whereon do grow very faire and pleasant flowers, made of one entire whole piece, which is folded or plaited in such strange soite, that it seemeth to be a flower made of fine sundry small leaves, which cannot easily be perceived except the same be pulled open. The whole flower is of a light purple color, striped down the middle of every fold or welt with a light shew of yellownesse, as if purple and yellow were mixed together. In the middle of the flower, thrusteth forth a thick flat pointal, yellow as gold, with a sharp green prick or point in the midst thereof. The fruit succeedeth the flowers, round as a ball, of the bigness of a little Bullessee or Wild Plum, green at the first, and black when it is ripe; wherein is contained small white seed, lesser than those of the mustard. The root is thick, fat, and tuberous, not much

* Early Tillotson trees of several years growth, standing side by side with other peach trees noted as thrifty when young, and all treated precisely alike, are as tall as any of the others.

differing either in shape, color, or taste from the common potatoes, saving that the roots hereof are not so great, nor so long; some of them are round as a ball, some oval or egg-fashion; some longer and others shorter; the which knobby roots are fastened unto the stalks with an infinite number of thready strings.

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Battata Virginiana sive Virginianorum et Pappus.

VIRGINIAN POTATOES.

[Here follows a cut of the plant, with roots and tubers.]

THE PLACE.

It groweth naturally in America, where it was first discovered, as reports *C. Clusius*, since which time I have received roots hereof from Virginia, otherwise called Norembege, which grow and prosper in my garden, as in their own native country.

THE TIME.

The leaves thrust forth of the ground in the beginning of May; the flowers bud forth in August. The fruit is ripe in September.

THE NAMES.

The Indians do call this root PAPPUS, meaning the roots; by which name also the common potatoes are called in those Indian countries. We have the name proper unto it mentioned in the title. Because it hath not only the shape and proportion of Potatoes, but also the pleasant taste and virtues of the same; we may call it in English, Potatoes of America or Virginia.

Clusius questions whether it be not the *Arachidna* of *Theophrastus*. *Bauhine* has referred it to the Night-shades, and calleth it *Solanum tuberosum esculentum*, and largely figures and describes it in his prodromas, page 89.

THE TEMPERATURE AND VIRTUE.

A. The temperature and virtues be referred unto the common potatoes, being likewise a food, as also a meat for pleasure, equal in goodness or wholesomeness unto the same, being either roasted in the embers, or boiled and eaten with oil, vinegar and pepper, or dressed any other way by the hand of some cunning in cookery.

B. *Bauhine* saith that he heard that the use of these roots was forbidden in Bourgandy, (where they call them Indian artichokes,) for that they were persuaded the too frequent use of them caused the leprosy.

DESTROYING THE GRUB AND WIRE-WORM.

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In a recent conversation with an intelligent farmer of Cayuga Co., N. Y., he described the method by which he saved his corn crop from the destruction of the wire-worm and grub. The former of these depredators had appeared in prodigious numbers—something less than a bushel per square rod of land, and their ravages were great. He ascertained by observation that they did not descend deep into the soil at the usual time of plowing sward land for corn, but continued mostly among the roots of the grass. His object, therefore, was to bury them alive. This he accomplished by turning over the sod with a powerful team, to a depth of at least eight inches, the soil being rather heavy. The surface was then pressed down evenly and firmly with a heavy roller. By this process several inches of compact soil lay above the region of the wire-worms, and as a consequence, whenever they attempted to pass upwards to the surface, they met with too formidable a resistance to penetrate. Hence, they continued with the grass below, and perished with its decay. Whether this be the true explanation or not, one thing was certain,—that where the corn was formerly almost wholly destroyed, it is now full and even in the rows, without the usual numerous vacant spaces over the field, always existing under the old practice.

By a similar process of observation, he was enabled to destroy the grubs. He discovered that these depredators, instead of remaining at the surface, like the wire-worm, descend deeply, and hence that deep plow-

ing brings nearly all of them to the surface. Hence by the use of a heavy roller, many of them were crushed, and the remainder immovably compressed in the solid earth, till a fine toothed harrow passing over the surface, tore out and destroyed them. The utility of this practice, like that of the former, has been amply proved by successful experiment.

Another practice of the same farmer, though not new, is worthy of notice. He has been enabled to keep his flock of sheep of the very finest animals only, by always doing his own picking for sales, instead of leaving this to the purchaser, as is too frequently the case. Or, at any rate, no sheep buyer is permitted to select from his flock, unless he is willing to pay fifteen or twenty dollars per head, which, of course, he will not do. A perseverance in this course for a long series of years has so improved his sheep, that though originally nothing uncommon, they will now compare creditably with many of the very finest in market.

DRAINING AND FENCING.

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MR. EDITOR—Although the advantages of draining are almost universally conceded, yet, how rare it is, to see in our travels in this country, well drained or thoroughly reclaimed swamps, or wet, low lands. Such lands, abounding in almost every district, when neglected, are not only unproductive and unprofitable, subtracting materially from the value of a farm, but are unsightly, and more or less prejudicial to health. On the contrary, when reclaimed, such lands, of all others, are the most interesting and productive. They have been depositories for freshets and floods for ages, and have received more or less of the manure and surface soil gradually carried from time to time from the surrounding knolls and hill sides. When thoroughly drained and stirred up by proper cultivation, and the inert vegetable substance brought into action by the application of the usual decomposing agents, such lands are distinguished for their enduring fertility.

Much money, however, is fruitlessly expended in the operation of draining. Very few of our native American farmers are skilled in the art, and like every other branch of farming, it will pay best when well performed. It is by no means necessary that a bog or swamp should have a "great fall" or inclination, to be well drained. It is customary to dig the ditches down to the gravel, instead of digging three or four inches in depth into the gravel stratum, which, by the bye, is one great secret in the business of draining. Where springs abound, either above or below the surface, they must, of course, all be let down into under-drains. An expert ditcher will not often be deceived about the location or source of blind springs, under the surface, which generally do most mischief. Such springs develop themselves by the peculiar character of the vegetation which covers them, or can be discovered by the tread. The location of drains is of the utmost importance. Twenty-four to thirty inches will in most places be found a sufficient depth. Thirty inches wide at the top, sloped to eighteen at the bottom, are the common dimensions of a good ditch; but if the gravel substratum be more or less shallow, the depth should always be determined by it. Stones, for many reasons, form the best material for filling such drains. After shovelling the bottom of the drain entirely clean of gravel or mud, the first layer of stone for a foot in depth, should be set in a vertical position, leaving no opening or culvert; the stone afterwards may be leveled promiscuously within eight inches of the surface, reserving the smallest stone for the top; this done, cover the stone, first, with the inverted sod, carefully cut from the surface of the ditch, and preserved for this purpose. Lastly, fill in over the sod all the earth thrown out by digging, which will elevate the surface, but it will settle down in due time. This method of draining I have practised, and prefer it to all others. An inexperienced farmer would profit by employing an experienced ditcher, from Scotland or Ireland.

FENCES have become as diversified and various as they are necessary and useful: the address of the late N. Biddle, Esq., of Philadelphia, to the contrary notwithstanding. He pronounced them absolute nuisances, and an annual tax upon the farmers of Pennsylvania of \$10,000,000, and recommends the European system, dispensing entirely with fences, using landmarks, shepherds, and dogs, in lieu of them.

The common worm fence, with stake and rider, is in almost general use in the interior of this state. This fence is made eight rails to a pannel, the worm four feet wide, stakes set out two feet at the corners; one foot more may be added which cannot be plowed, making ten feet of land in all, occupied by the fence. Such a fence, on a farm of 100 acres, divided into fields of ten acres each, with a lane through the centre, will occupy about six acres of land. Capt. Hall, the English tourist, described our worm fences as zig-zag, and the most unsightly and disgraceful looking things he ever saw. The scarcity of rail timber, however, will make this kind of fence give way to something more neat and economical.

Locust posts and five chestnut rails constitute one of our best fences. Since iron has depreciated, some of our enterprising furnace proprietors have cast a neat article, with five holes, designed for posts, which promises fair to take with our farmers. Posts made from white oak, or chestnut wood, lacking in durability, are troublesome and expensive. The farmers of Salem county, New-Jersey, are now partial to a kind of worm fence, without stakes and riders; they insert an iron rod three-eighths of an inch thick, through the corners; the rod is turned at the bottom, and bent over the top rail so tight as to make the fence withstand a tempest. In this fence, there is perhaps more economy than any other now in use; it occupies about half the ground taken up by a stake and rider fence. Five to six rails are sufficient for a pannel, making a handsome fence, resembling a wave, at a distance. I put up some myself for a trial; I am much pleased with it. Using good chestnut rails, set on flat stones for corners, renders such a fence almost indestructible.

W. PENN KINZER.

Springlawn Farm, Pequa, Lancaster Co., Pa.

WEANING FOALS.

MR. TUCKER—About three weeks since, I took from a couple of mares their foals, and put the latter into a meadow to wean. In order to keep them quiet, I put in with them a young mare, with whom they and their mothers had constantly run. In a few days it was discovered that one of the foals was in the habit of sucking this mare, and on examination I found that on one side there was something of a swelling or bag, and there was a milky substance contained on this side. One of the foals, also, was evidently receiving an injury. The mare was then removed; but I found the swelling still increasing along the belly towards the fore legs; the legs also began to swell, and even the hind legs swelled to such a degree that she could not trot, and it appeared to require an effort to move the left hind one, that being much more swollen than the others.

Some rowels were put in the belly, but still the swelling continued to spread at the rate of about half an inch round, in two days, while the milk corrupted in the bag and rather diminished in quantity.

Perhaps by inserting these facts in the Cultivator, it may save others from like trouble.

D. C. C. WRIGHT.

Granville, O., Oct. 9, 1846.

BED-BUGS.—The common bean leaf is said to form a good trap for catching these troublesome vermin. The leaves are placed, bottom upwards, in suitable places, and the bugs get their legs tangled in attempting to crawl over them. Try it.

BEEES—COMPOSITION OF HONEY.

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MR. EDITOR—There is much in the economy of the bee that is wonderful, and by me is little understood.

I have, for thirty years, been a keeper of bees, and a careful observer of their operations; still I am ignorant of many things pertaining to their natural history. I have, however, discovered one thing that has interested me respecting the process by which their honey is made, and many years of observation have confirmed me in the correctness of my belief.

The honey is made by the combination of two materials, the pollen of the flowers, which the bees carry in upon their legs, and the nectar which they carry in a sack in their bodies. The pollen is deposited in the cells of the comb, and dissolved by a chemical solution, with the nectar. Just at the time when the solution is complete, the cell is capped over, and its contents reserved for future use.

I have found this process going on in several stages. I have found cells filled or partly filled with the dry pollen, of a bright yellow color, as it appears upon the legs of the bees. In other cells I have found it a little moistened, and turned to a little darker yellow. In other cells I have found the top dissolved to liquid honey, while the undissolved pollen was at the bottom. In other cells I have found the whole mass partially dissolved, having the appearance of granulated honey. I have been satisfied of these facts by a particular examination of many hives, which I have taken up within the last fifteen years. Recently a young swarm left a hive after making three pieces of comb about six inches in diameter. I found in this comb no honey, but deposits of pollen in the bottom of the cells, as above described. Had they continued, this comb would doubtless have soon been filled with pure honey, the deposits of pollen being reduced to a liquid state.

The general belief I suppose to be, that the pollen, which they carry in upon their legs makes the bee-bread, and that the honey is only a deposit of the nectar, which they carry in in their bodies. But the bee-bread, so called, I believe to be nothing more nor less than the damaged materials of the honey, left in an unfinished state, when their operations are arrested by the frosts of autumn, or by any other cause.

When the process is left unfinished, the materials soon become rancid, and mould; and being unfit for food, it is left in the cells until the next spring, when the bees may be seen carrying out such portions of it as can be detached from the cells, and what cannot be, is left to accumulate from year to year, till the old hives become very much filled with the bee-bread.

Very great quantities of pollen are carried into every new hive—enough, I presume, to fill every cell—and yet, in a new swarm, you find very little bee-bread, and that only in the outskirts of their comb, where their works were arrested in an unfinished state at the approach of autumn.

Here I would suggest that many bee-keepers suffer loss by neglecting to put caps or small boxes upon the tops of their hives at the close of the swarming season, or about the first week in July. I use boxes about a foot square, and six inches deep, and some of my best swarms fill two in a season, and yield me from twenty to forty pounds of honey.

Some people have complained that they cannot make their bees work up into the boxes. But I have found no trouble in this respect. When I make my hives I make about six holes with an inch auger, in the top of the hive, and cut out the wood so as to bring two or more of the holes into one, and place the holes so that they will come near the edge of the box, that the bees may have an easy access to the box, and be able to ascend its inner side. I have a mouth to the box, the same as to the hive, that when they commence operations, they may not be obliged to pass through the original hive to their work.

When I wish to remove an old hive, I put a box of suitable size beneath, and when the breeding season is

over, I remove the old hive, and put a new one in its place.

The most convenient way to take up these boxes or caps, is to remove them in the evening, or early morning, carry them a few rods distant from the bee-house, turn them bottom upwards upon the ground, and put over them a large box, such as is used to carry dry goods in, having a small hole or two, or a crack in the top. After the sun is up, and it has become so warm that the bees will fly, you may punch the box of bees with a stick, and if you please, occasionally lift the large box upon one side, when the bees in great numbers will escape and return to their old habitation, where an empty box should be previously placed to receive them.

There is some difficulty in expelling the bees from an old and deep hive, which has been their chief habitation. They are not easily driven out by the process above described. I have known two methods to effect this; one is to put the hive bottom upwards, in a tub, and turn in water, and thus drive them out; the other is to split the hive open with an axe; cover them with a large box, and drive them out, after they are vanquished, as described, in driving them out of the small boxes. But of the success of these methods I cannot speak from my own experience.

Yours, &c., E. D. ANDREWS.

Armadec, Mich., 1846.

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REMARKS.—It will be noticed that in the above communication, our correspondent advances the idea that honey is composed of two substances—the pollen and the nectar of flowers. The idea is new to us, but may, notwithstanding, be correct. There are, undoubtedly, many things yet to be learned in the economy of bees, and we think the subject of Mr. ANDREWS' theory deserves investigation.

We have turned to some authorities to see what is the generally received opinion in regard to the composition of honey.

LIEBIG, in his Animal Chemistry, speaks particularly in regard to the production of wax from honey. He holds that wax may be formed from honey, without any other substance; and the argument which he designed to draw from this was, that in the animal economy, fatty matter may be formed from sugar—a theory in opposition to that held by BOUSSINGAULT and DUMAS, that fat could only be assimilated from oil ready formed in the food. But LIEBIG remarks—

"In order to produce wax in the manner described, the bees require no pollen, but only honey."

This is sufficient to show that he believed pollen unnecessary for the formation of honey. He adds—

"I cannot, therefore, believe that pollen furnishes food for the bees, but I think they only swallow it, in order, by mixing it with honey and water, to prepare the liquid food for the grubs."

The use of pollen in preparing food for the young bees, or larvæ, is then, according to LIEBIG, the only purpose to which it is devoted.

BEVAN speaks more fully in regard to the composition of honey, as will be seen from the following extract:

"In the Philosophical Transactions for 1792, Mr. Hunter has stated, that whatever time the honey bags may be retained, they still remain pure and unaltered by the digestive process. M. Polhill, a gentleman to whom the public are indebted for several articles in Rees's Cyclopaedia appertaining to bees, is also of this opinion. Messrs. Kirby and Spence do not admit this statement; as the nectar of flowers is not of so thick a consistence as honey, they think it must undergo some change in the stomach of the bee. They are countenanced in this opinion by Swammerdam and Reaumur: the latter has observed that if there was a deficiency of flowers at the season of honey-gathering, and the bees were furnished with sugar, they filled their cells with honey differing in no other respect from honey collected in the usual way, but in its possessing a somewhat higher flavor, and in its never candying, nor even losing its fluidity by long-keeping. The same has

been observed when they imbibe the juices of sweet fruits, for bees do not confine themselves solely to flowers and honey-dewed leaves: they will sometimes very greedily absorb the juice of raspberries, for instance, and thus spoil them for the table; they also visit in crowds the vats of the cider and wine maker. The naturalists just named, highly and deservedly as they are celebrated, are not borne out in their opinions either by my own experiments, or by those of apianian correspondents. We have each tried supplying bees with syrup of sugar as a resource for winter, without finding any material change in it after it was stored. It might be clearer, but no other difference whatever was perceptible.

"Reaumur has likewise remarked that in each honey-cell there is a cream-like layer or covering of a thicker consistence than the honey itself, which apparently serves to retain the more liquid collections that are from time to time introduced under it. Messrs. Kirby and Spence say, that if honey were the unaltered nectar of flowers, it would be difficult to conceive how this cream could be collected in proper proportions. This observation is made in consequence of their presuming that some of this cream-like covering is conveyed into the cells with each deposition of fresh honey; and it has been supposed that this cream was the last portion disgorged. According to an article in Rees's Cyclopaedia, probably written by Mr. Polhill, this cream-like matter is formed at the very first and every addition of honey is deposited beneath it. The bee, entering into the cell as deeply as possible, puts forward its anterior pair of legs, and with them pierces a hole through the crust or cream; while this hole is kept open by the feet, the bee disgorges the honey in drops from its mouth; these passing into the hole, mix with the mass beyond; the bee, before it flies off, new-models the crust, and closes up the hole. This mode of proceeding is regularly adopted by every bee that contributes to the general store." [See Bevan on the Honey Bee, pp. 263, 264.]

The same author speaks in another place in reference to pollen and its use by the bees. He says—

"This substance was once erroneously supposed to be the prime constituent of wax; but the experiments of Hunter and Lüber have proved that wax is a secretion from the bodies of wax-working bees, and that the principal purpose for which they collect pollen is to nourish the embryo bees. Huber was the first to suggest this idea, and it well accords with what we observe among other parts of the animal kingdom;—birds, for instance, feed their young with different food from what they take themselves. Mr. Hunter examined the stomachs of the maggot bees, and found farina in all, but not a particle of honey in any of them. Huber considers the pollen as undergoing a peculiar elaboration in the stomachs of the bees, to be fitted for the nutriment of the larvæ."

HUISS, a close, and in general, accurate observer, describes honey as—"a gummy, saccharine, fermentative juice, one of the immediate principles of vegetables, and which has received a particular elaboration in the stomach of the bees. It is in this laboratory that it assumes that viscosity and consistency, which it did not possess in its natural state, and also that peculiarity of fragrance and taste by which it is so essentially distinguished." * * * "The question has been long disputed amongst naturalists, regarding the elaboration which honey undergoes in the stomach of the bee; and whilst some maintain that it undergoes a decided alteration, others affirm that it is deposited by them in the cells in the same state that it is extracted from the flowers. The latter hypothesis is, however, in a great degree invalidated by the circumstance, that the flavor and taste of the saccharine juice in the nectarium of the flowers are decidedly different, as may be ascertained by sucking the pips of the cowslip, and those of the white or red clover; whereas, when these same juices are deposited in the cells of the bee, they have acquired one uniform taste and fragrance, which they did not possess in their natural state, as well as a

visciduity and consistency which could only have been obtained by some unknown elaboratory process. Were the honey, when deposited in the cell, to be of that thin and fluid nature in which it appears in the nectarium of the flower, it would flow out of the cell; at the same time it must be admitted, that the elaboratory powers of the stomach of the bee must be wonderfully great to change the nature of a natural production in so short a time as that which intervenes between the extraction of the mellifluous juices and their deposition in the cells." [Luish's work on bees, pp. 369, 375.]

The ideas of this writer in regard to pollen seem to be so different from any we have met with, that we cannot at present assent to them; yet we deem it proper to give them for the examination of our readers.

"It has," he says, "been asserted by some apiarians, that bee-bread, or the pollen of flowers, is the food which is administered to the young; but so far from this substance being gathered as the food of the larvæ, we can affirm that under no circumstances whatever, is it applied to that purpose, nor does it under any modification whatever, form a part of the food of the bees. Honey is their only natural food, and although they possess the power of regurgitation, yet we never experienced a single instance in which honey was regurgitated into a cell in which there was an existing worm. Rather than consume a single particle of bee-bread they will die with hunger." [pp. 344, 345.]

CATCHING RATS.

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GOVERNMENTS have offered bounties for the destruction of bears, wolves, and foxes, while the rat, the most injurious to the interests of man of all quadrupeds, is allowed to pursue his marauding career entirely independent of legislation.

It is not a very easy matter to extirpate rats; they are endowed with more sagacity than they generally have credit for, and under the promptings of self-preservation, often elude plans which are laid for their capture. A friend of the writer, quite distinguished as a successful hunter, has frequently been heard to make the remark, that he could catch a fox easier than he could catch a common house-rat.

A writer in the Ayrshire (Scotland) *Agriculturist*, appears to understand the business of rat-trapping, and gives some directions on the subject which we think worthy of remembering. He recommends the round and square wire traps; and in order to take the rats, he states that "it is in the first place necessary to remove their suspicions, to get the better of their cunning; in short, to throw them off their guard." He thinks this can be most effectually done by "fastening the doors of the trap open for a night or two, so that the rats may have free ingress and egress." He supposes that rats, as well as many other animals, possess the power of conveying intelligence to each other; and when one has found a delicious morsel, he will convey the intelligence to his comrades. As bait, he prefers bacon, fried till it is somewhat burned, with plenty of grease. He recommends that the trap be visited early in the morning, for if the rats remain long in the traps it will be the means of frightening the others so that it will be difficult to catch them.

"Poison," he says, "can only be resorted to in such places as are inaccessible to any other living animal. It can safely be applied in sewers, drains, and such like places, and should always be combined with some savory fry. In this instance, again, feed for a night or two ere mingling the poison in the food—you will thus lull suspicion and commit greater havoc. I may here observe that common bottle corks, cut in very thin slices, will kill rats, and will be greedily devoured. Phosphorus has been recommended, and so has broken glass. For my own part, I detest poisoning, and prefer the trapping system. Either when using trap or poison, you will find your success immeasurably enhanced by using a few drops of the following mixture upon the mess used as bait. It is the preparation generally

employed by professional rat catchers, and is that to which they have imputed such wonderful effects—such as decoying the vermin into one spot, and there destroying them wholesale. I must, however, confess that I have both sought and met with some of the most talented and successful professors of the art of rat-catching, without witnessing such miracles. I once, however, did see a tame rat, (in Edinburgh, at the back of the Castle, in the year 1837,) which, having been previously smeared with a certain composition—that which I am about to describe—was let loose in a vault, and in less than half an hour returned followed by some half-dozen others, which seemed so enamored of the decoy, or of the scent that hung about him, that they suffered themselves to be taken alive in the rat-catcher's hands, without ever offering to bite. The preparation I purchased from an eminent practitioner in rat-catching. It is as follows:

Powdered Assafoetida, ¼ grain.
Essential Oil of Rhodium, 3 drachms.
Essential Oil of Lavender, 1 scruple.
Oil of Anniseed, 1 drachm."

BREEDING STOCK.

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THE *New-York Farmer and Mechanic*, speaking of the stock exhibited at the late Fair of the American Institute, makes the following statement:—

"We will here take occasion to remark, what all will acknowledge, who carefully examine for themselves, that our best stock is produced by crossing the breeds. No matter how good at first, experience shows that they can be made better; and it is a law of nature that all things degenerate by a continued growing from the same seed or blood."

The writer of the above quotation may have seen enough to induce his belief "that all things degenerate by a continued growing from the same seed or blood;" but for ourselves, we have not so learned the operations of nature. That it is possible, under some circumstances, to improve both animals and vegetables by cross-breeding, we do not deny, but a latitude is here given to the practice, which might be productive of great injury. According to this writer, "no matter how good at first," animals may be, "experience shows that they can be made better" by crossing! It strikes us that the proposition involves a palpable inconsistency, for if it is "no matter how good" our stock may be "at first," we would take such as are perfect; and we should like to know how perfection can be improved?

But we find these distinct races and breeds existing naturally; and, if, in the beginning, they so well answered the designs for which they were created, as to be justly pronounced "very good," it seems to us that the doctrine which would break down these lines, should be received as too much akin to that which would cause the oak to produce the pumpkin. It would throw the fairest works of nature into confusion; it would unite the Caucasian with the African or the Mongolian, and their progeny with the aboriginal American; it would lead us to sacrifice the fine fleece of the Merino sheep for the sake of intermingling the blood of the coarser races: it would lead us to destroy all the distinct and beautiful breeds of horses and cattle, by mixing them together; and, in fact, throughout the animal and vegetable kingdoms, would leave nothing but hybrids and mongrels.

As to plants or vegetables, we know the idea is entertained—though erroneously, as we think—that all varieties "run out" if propagated continually from the "same seed;" and this leads to the notion of a necessity of change. A farmer obtains a variety of wheat, or some other grain, which proves to be better suited to his soil than any other; but he can only keep it a few years before he concludes that it "has been raised on his farm long enough," and he changes it for some other kind.

Now we admit that with the careless and slovenly husbandry which too many practice, this "running out"

actually takes place; they get good seed, but allow it to degenerate and become adulterated by their bad management. Their land is not properly tilled; their crops are light; their grain is mixed with seeds of pernicious plants; and this spurious product is sown year after year without any attempt to improve it. What but degeneracy could be expected?

We believe the grand principle of improvement, both in plants and animals, is SELECTION. Always choose the best for propagation, and improvement may be advanced to the highest practicable point.

THE BARBERRY.

MR. EDITOR—In the October number of the Cultivator, is a communication from Mr. Barnes, in which he inquires if the barberry will blight wheat and rye; and thinking the following may assist in coming to a correct conclusion, I submit it for consideration.

On my father's farm, is a lot on the south-west side of which are two large barberry-bushes, standing near each other, and the only ones in the neighborhood. This lot has been repeatedly sown with rye, and no deleterious effect perceived from the barberries;—in fact, we thought they would not blight;—but in the fall of 1837, this field was again sown to rye, and the next summer the effect of the barberries was too apparent to be mistaken even by the most casual observer.

A piece of about two or three rods in width, and extending into the field eight or ten rods, in a north-eastern direction from the bushes was totally blasted—the straw black, and falling down with no grain at all; while on either side and beyond, the rye was good and well-filled. This blight extended over about one-fourth of an acre; some part of it, but partial, was traced directly to the barberries; because on the side next to them, the blight extended to the outside of the field, while on the opposite side, the rye was perfectly good; and no blight was perceived in any part but adjoining these bushes. It was noticed at the time by many persons, who can be referred to for the truth of the above statement.

Now this we consider proof positive that the barberry will blast rye, although your opinion, (always entitled to great weight,) is so decided to the contrary; for we can account for it in no other way.

Is not this the true cause of the blight?—that the barberry and the rye were in blossom at the same time, and the pollen of the barberry was blown by the wind on the open blossom of the rye, thus causing blight? If this be so, the one must be in a proper state to give, and the other to receive the blight at the same time, which would be very short, and might not often occur; and will not this explain the reason why it does not every year produce the blight, or more frequently than it does. Besides, it might require the weather to be damp; but, evidently, the wind had an effect, for, if it had blown harder it would have carried the blight further; and if it had been in a contrary direction, or had not blown at all, it is probable no effect would have been produced.

Now in the statement of Mr. Hecox, vol. VII., p. 175 of the Cultivator, did the bush which he set in the middle of his field—and which to him so conclusively proved that the barberry will in no case blight—produce any blossoms? I should think from its being transplanted it would not, and this might be the reason that it had no effect. But this one case, or the three cited by you, no more proves that the barberry will in no case blight, than the escape of a few persons from a prevalent disease would that it was not contagious.

Mr. Barnes says, the person of whom he procured his bush had three large ones standing on his farm for 20 years without any influence whatever on his wheat; but he does not say that he has sown wheat in their immediate vicinity—perhaps he has not within a mile of them!

That one bush will blight an entire field of many acres is absurd; but we, although not given to belief in the marvelous—or that wheat is chess and chess is wheat

—still are satisfied that in some cases the Barberry will blight rye—for facts are stubborn things, and cannot be easily overthrown by philosophical theories or chemical experiments.

J. G. CLARKE, Jr.

Kingston, R. I., October 29, 1846.

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REMARKS.—We differ altogether with the writer of the above communication, in regard to the tendency of his "facts." The first and main point which he wishes to make out, is, that in 1838, a field of rye was blasted by two barberry bushes; at the same time he admits that "this lot had been REPEATEDLY sown with rye and no deleterious effect perceived from the barberries." As soon, however, as a season occurs in which a portion of the grain blasts, it is charged to the bushes!

But he suggests that the exemption of the previous crops from blight, was owing to there having been no blossoms on the barberry bushes in those years. In this, we will give him the credit of being the first, to our knowledge, who has attempted an explanation of the supposed deleterious influence of this shrub. But will "facts" support his theory? We feel quite confident they will not, though we would not pronounce rashly. In the instance to which we referred, as having fallen under our own observation, we know the bushes bore fruit, and of course had blossoms, nearly every year.

He says the "three cases" cited by us do not prove that the barberry will in no case cause blight. We cited four cases, and he throws into the same scale the "fact" of a field having been for several years sown to rye without any ill effect being observable from the barberry-bushes standing near, and yet attempts to prove, by only a single case that they will produce injury!

But the principal "fact" in regard to the subject is, that grain sometimes blasts and sometimes does not blast, in the vicinity of barberry bushes and elsewhere. It is difficult to assign causes, in all cases, for this effect, as well as many other phenomena in nature. It is, however, only by an accumulation of "facts" that we can expect to trace effects to their legitimate origin. At present, we think, the weight and number of "facts" decidedly against our friend's theory.

CHARCOAL AS MANURE.

.....

MR. TUCKER—I see in the report of the Commissioner of the Patent Office, notice of some extraordinary results, gained in the wheat crop, by the application of 50 bushels of pulverized charcoal to the acre. Will Mr. Haywood, of Sandusky, Ohio, or some other farmer, who has successfully tried it, inform me through the Cultivator, on what kind of soil the coal should be applied for the best result? Whether moist or dry land, clay, loam, or sandy soil; and if it should be applied invariably in the spring; and if it is known to have a better effect on soil that contains a good portion of lime, or that without lime?

To gain orthodox information I send to the Albany Cultivator, as head quarters. Although the Southern Cultivator is gaining ground rapidly, yet the southern farmers have not thrown off their loose habits of doing things so much at random. They must practice closer observation to learn the best way of making any experiment before they can judge of the cause of failure, or the particular point to be observed, in order to give the most complete success.

HENRY M. EARLE.

Earlesville, S. C., Oct. 22, 1846.

P. S.—The sides of our mountains, in this latitude, 35 degrees, 10 minutes, promise good success for the culture of the grape and the manufacture of wine. Is it known what kind of manure will give the best flavor to the grape, and produce the most luxuriant growth?

[We believe it has been decided in Germany that the best manure for vineyards is the leaves and trimmings of the vines, mixed with ashes, and worked into the ground.—ED.]



PLAN OF A COTTAGE.—Fig. 103.

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MR. TUCKER—Having observed in the *Cultivator*, a request that some one would furnish a plan for a cottage, the rooms all to be on the same floor, I beg to enclose you one which I hope will be agreeable to your correspondent. Having neither cellar nor attic, it would be warm in winter and cool in summer; would be free from the unwholesome vapor arising too often from decaying vegetables in a cellar under a residence; and not only free from cold draughts of air from the attics, but in case of fire would be very easy to escape from—indeed no loss of life could occur. It could be also very cheaply built, there being no expensive carpenter's work, as the ground floor would be the only one, and that might be made of plaster, painted, and covered in winter with carpets, in summer bare. In this way the building might be made nearly fire proof. The walls may be either stone, (in which case they must be lined with wood and plaster,) brick, rough-stone plastered, dried clay, or gravel and lime, or even lath and plaster. All these last to be durable, should be either coated with Hearle's cement, or with a cement made with slacked lime, litharge, and linseed oil—say oil enough to moisten the lime, and an ounce of litharge to a gallon of oil; then mixed with three parts sand and water to a consistency for use; making a perfectly hard, durable cement that resists weather and frost.

For a roof, the plan lately adopted in Upper Canada, I think preferable; namely, simply to cover with dry, narrow, well-seasoned boards, tongued and grooved—the joints from the apex to the eaves. These boards to be afterwards painted with some coarse color—say ochre, and then sanded. This should be repeated after a year; the joints if needful filled up with lime, oil, and sand; and then finished with any color desired; or for economy, the cement called Hearle's; or the composition of lime, oil, and sand, might be applied, to be repeated at the end of a year—as during that time the boards will shrink, however well they may previously have been seasoned.

These roofs are almost as fire proof as slate or metal, and in case of fire do not endanger other buildings as shingles do; they are also cheaper than shingled roofs, and neater.

In finishing the interior—which ought invariably to be plastered, being cheaper, cleaner, and more durable than wood—a mode has been adopted lately in Montreal, in some public buildings, of great service where economy is looked to; namely, coloring the plaster while wet, in a similar manner to that adopted in London, in the new houses of Parliament, and for years back common in Italy—I mean *fresco*. It consists in applying certain durable colors mixed with simple water to the plastered wall before it has time to dry. In this way it becomes incorporated with the plaster, is perfectly durable and can be washed—even if not intended to be the permanent coloring, it causes the wall to look neat until dry enough for painting or papering. The following colors answer perfectly and never fade:

Blue black—grey, in shades.

Blue vitriol—blue—is decomposed by the lime, and forms this color.

Powder blue—or smalts—this is used for linen occasionally—it is finely powdered glass.

Blue verditer—blue.

N. B. Prussian blue, damp blue, blue ochre and all such, fade at once.

Mineral green—green.

Blue verditer and chrome yellow—green.

N. B. No other greens can be used except chrome oxide, which is too dear.

Yellow ochre—yellow.

Green vitriol—yellow—this is decomposed by the lime, and a yellow is the result.

Chrome yellow—must be used with care, or scarlet specks will be formed.

Red ochre, Venetian red, } various shades, all durable.
Indian red, purple brown, } ble.

Vermillion—answers well, and gives the most beautiful shades—very superior to those with oil.

Vandyke brown, }
Raw umber, } all good.
Burnt umber, }

Of course, vegetable or animal colors are useless.

I have so contrived the building that a green-house can be annexed having no windows opening into it—except those from the parlour. For the cellar and root-house, I propose one be constructed under the coach-house—the floor to be composed of solid timber and plaster, to keep out the frost—and that an ice-house, with a dairy and pantry over it, be built in another part of the yard. A stable, with manure pit beneath, and hay loft over, being constructed at some little distance, for fear of fire.

I now refer to the plan herewith:

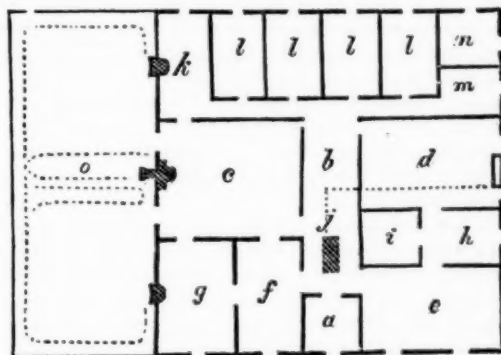


Fig. 104

a, outer hall,	10 feet by 10, 10 feet high;
b, inner hall,	33 feet by 10, 12 " "
c, drawing-room,	24 feet by 19, 14 " "
d, kitchen,	24 feet by 14, 14 " "
e, dining-room,	24 feet by 14, 10 " "
f, library,	12 feet by 19, 10 " "
g, best bed-room,	12 feet by 19, 10 " "
h, pantry,	10 feet by 14, 14 " "
i, store closet,	10 feet by 10, 10 " "
k, nursery,	10 feet by 19, 10 " "
l, four bed-rooms,*	9½ feet by 16, 10 " "
m, servant's room,	10 feet by 10, 10 " "
n, man's room,	10 feet by 9, 10 " "
o, green-house,	50 feet by 25, 18 " in centre.

I have given an elevation to exhibit, the general appearance, and also add a section to show how the extra

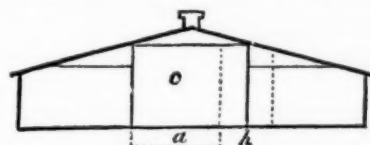


Fig. 105.

height of the parlor and kitchen is got out of the rise in the roof. This height is a great improvement in appearance, adds to the comfort of the resident, and is required to make the proportions correct. The nursery and servants' bed-room windows, should open down to the floor, as should those in the parlor, kitchen, and pantry. The inner hall can have a stove in it, to warm the bed-rooms, and the stoves in the parlor, best bed-room, and nursery, can communicate with flues to warm the green-house.

ZEA.

Montreal, 1846.

American wheat, 9¾ bushels, of 60 pounds to the bushel, equal to the English quarter.

* If these are too small, three of 12 feet each instead of four

POINTS OF CATTLE.

.....

[THE principles of improving the breeds of cattle and other stock, are not generally understood in this country; nor is much knowledge manifested in regard to the *points* by which animals, (especially cattle for fattening,) should be judged; and we have no doubt that a want of information on these matters, operates to lessen the proceeds arising from the rearing of stock, to the amount of twenty to fifty per cent. The following observations refer chiefly to the points which Short-Horn cattle should possess, to fatten to the best advantage, though they are in general equally applicable to other breeds designed for the same purpose. The remarks comprise a portion of an essay on cattle, published by the Royal Agricultural Society. We would call particular attention to what is said in reference to *handling*, a point, which, though it is unquestionably of more importance in cattle designed for slaughter than any other, is probably with us the least understood or regarded.]

.....

The rump-bone, when the beast is in a lean state, should be about two inches off, and the upper part of it level or even with the under side of the tail. When the rump-bone lies near to the tail, it shows the smallest quantity of fat laid on that part; but the general dislike to this is proved by the name of "Tom Fool's Fat" being given to it. When narrow in this part, there is always a want of substance and lean flesh between that and the hip, and a part between them where the fat of the two points does not join together; whereas when the rump is farther from the tail, the fat is continued from it to the hip. The distance from the hip and rump should be long and full of lean flesh; the hips should be wide, especially those of a female, which should be wider in proportion than those of the male. The shape of the hip is difficult to describe, but should be something like a round-pointed triangle, with one end hanging downwards, and on putting the fingers on to the centre a hollow will be found. The loin should be flat and wide; and when lean, two knobs or pens should be felt, which when fat, will be the base of two ribs, called false ribs, which connect the hip and rib together in mass. The part commonly called "the space" from the hip to the rib, is generally recommended to be short; but still it must be borne in mind that the beef on this part is of more value than any other; and if the loin be flat and wide, and the rib high and round, no ill effects will proceed from a moderate length of space, and it unquestionably gives that length and grandeur to the character of an animal which is very desirable: it is the want of a wide loin and round rib, and not the length of space that causes gut. The rib should come well out of the back, and be broad, round and deep. On putting the fingers and thumb on each side of the rib, and drawing them together, the skin should be thick, pliant, and mellow, and the hand be filled with long soft hair, and the feel underneath should be smooth and pleasant. The sensation derived from a fine touch is delightful to an amateur breeder, but cannot be defined; few things denote a good hardy constitution more than a soft thick skin, full of long hair. Putting the finger and thumb on each side of the rib as above described is called "*handling*" in the north, but in the midland and southern counties it is generally called "*quality*." Whether that term had its origin at Smithfield we need not inquire, but certain it is that Mr. Charles Colling knew of no such word as applicable to inclination to fatten. "*Quality*" is frequently used to denote firmness of flesh, and sometimes it is misapplied, as in hardness of flesh, but seldom used to signify inclination to fatten; the mistake in this particular has done much harm to many herds of Short-Horns. Let *handling* and *quality* go together in a fat animal, and a good bred Short-Horn will have waxy beef, under a loose, pliant hide, full of soft, long hair; but in a poor beast, "*handling*" is the only test to discern the inclination to fatten. *Handling* is the most important subject we have to consider; it is the

grand characteristic of a Short-Horn, [or other beast designed for fattening.] Of what value would an animal be, possessed of perfect symmetry, if he could not be made fat without extraordinary keep? It has been said above, that it was Mr. Charles Colling's fine touch in this particular that enabled him to bring the Ketton Short-Horns to their unrivalled state of excellence; its importance has led me to dwell upon it at some length; but it is impossible to describe the kindly *feel* which is conveyed to the senses by the *handling* of a first rate Short-Horn; yet the knowledge of it is absolutely necessary for a breeder to possess before he can bring his herd to any high state of excellence. The next point under consideration is the crop, in the shape of which, width of the back, and roundness of the rib, but in a less degree, should be continued forward, so as to leave no hollow behind the shoulders. The shoulders on the outside should have a roll of fat from the lower to the upper part of it; the nearer to the top, the more closely it connects the crop and the collar in front of the shoulder together. In the anatomy of the shoulder, modern breeders have made great improvement on the Ketton Short-Horns by correcting the defect in the knuckle or shoulder-point, and by laying the top of the shoulder more snugly into the crop, and thereby filling up the hollow behind it. This is an important improvement, but it may be questioned whether the great attention that has been paid to this has not been attended by the neglect of some other more valuable parts, for we now seldom find those long hind quarters, so peculiar to the Ketton Short-Horns. Shoulders should be rather wide at the top; that is, they should not lie close to nor be quite so high as the withers; for when they are narrow at the top, and too oblique in the shape, they never cover with fat over them properly, and the neck of such animals is often too low. Mr. Mason, of Chilton, whose attention was first drawn to this point, with his wonted skill, succeeded to admiration; the prominent breasts and oblique shoulders of his beasts, on a side view were perfect; but the shoulders were close and narrow at the top, and did not load with fat. The first evidence of this, of notoriety, was in the beautiful cow Gaudy, (whose picture is to be seen in the first volume of the "*Herd-book*,") who, when slaughtered, was barely covered in this point, although very fat in all other points.

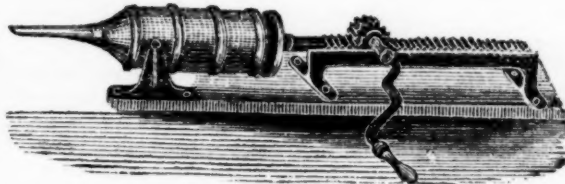
The neck and head are not *handling* points; but I will briefly notice them before I turn to the lower part of the body. The neck should be thick and tapering towards the head; a thin neck is strong evidence of a want of flesh and substance in other parts. There are various opinions on the shape of the head; some prefer it to be long and lean, whilst others approve of its being thick and short; but to be broad across the eyes, tapering considerably below them to the nostrils, which should be capacious, with a cream or flesh-colored muzzle, will be nearly correct; although it is but right to state that there are many well-bred Short-Horns with dark muzzles. This has been considered by many to be a recent introduction, through some inferior cross; but without denying that, let it not be forgotten that some of the early Short-Horns were not entirely free from it, although not very common; but the sire of Foljambe could not boast of much delicacy there. The horn has often been called a non-essential, and in some respects that may be true; yet it must be admitted that a small, moist, white or yellowish horn, coming well off the head with a graceful circle, and with a downward tendency at the end in a female, and an inclination upwards in an ox, contributes much to the character and appearance of an animal, and denotes a feeding propensity. The eye has had its fashion at different periods: at one time the eye high and outstanding from the head, and at another time the sleepy eye sunk into the head; but these extremes have merged into the medium of a full, clear, and prominent eye, with a placid look. The neck-vein forms a collar in front of the shoulder, extending from the upper part of it down to the breast end, connecting the fat on the shoulder with the fat on the breast, thereby promoting a uniform

covering of fat throughout every part of a beast, commencing at the rump, and proceeding along the back to the hip, loin, rib, crop, shoulder, and breast, without patch, or any one part having excess of fat beyond that of its neighbor. The breast should come prominently out from between the fore legs, and extend down to about two or three inches of the knee-joint, and its width should never be lost sight of. An animal with a wide back and a wide breast cannot fail to have substance, fore flanks, wide fore legs, and other indications of a strong and vigorous constitution. The buttock is a part that is not handled as a fat point, but should not pass entirely unnoticed, although in the best bred Short-Horns there is little occasion for caution against the black flesh in this part, which some other animals have; but a want of lean flesh is as great an evil as an excess of it; it is necessary, therefore, that there should be great fulness nearly as low as opposite the flank, tapering from thence to the hock; this fulness should be on the inside as well as the outside of the thigh, and give a full twist, lining the division between the hams with a continuous roll of fat to the next point under the belly.

Hitherto my observations have been confined to feeding propensities only, without any regard to the dairy. It is notorious, and much to their detriment, that many of the most superior Short-Horns do not possess that quality in an eminent degree. The annual loss to the breeder on each cow is very considerable, when we see that of two cows consuming an equal quantity of food, one gives six gallons of milk per day, and the other gives two only, this loss of milk will require much gain in beef to compensate for it. Cows for the dairy require to be of the same shape, and possessed of the same feeding propensities as have been attempted to be described above, with the addition of a well-shaped udder. When in full milk, the udder should be capacious and flesh-colored, with paps standing square and at a distance from each other, the hind part to appear as if it proceeded from the twist; and it is the fore paps that give the most milk; the milk veins under the belly should be large and full. There is no test to determine beforehand whether a cow will give good milk or bad, but it is at all times very essential to rear bulls out of cows that are descended from a tribe of good milkers.

Having given a general outline of all the points of a good Short-Horn, there is still the outward contour and character deserving of notice. On viewing an animal all the points described above are brought to our sight at once, and we can almost determine upon their merits at sight, without the more unerring test of the fingers. The placid looks, the graceful head, neck, and horns, the straight top, the prominent breast, the snug laid shoulders, the wide back and hips, the round ribs, the fine long quarters, the flowing silvery hair, the clean limbs, and great substance—all present themselves simultaneously, and give an impression that language cannot define. An artist, on looking at a painting, can instantly discern whether it is a highly-finished picture; but if called upon to describe its merits, he would, I presume, be at a loss for language to convey his feelings and judgment to an inexperienced person; and there is the same high finish in a good Short-Horn, attended with the same difficulty of explanation. Experience is universally allowed to be the best teacher; though, if we are left to our own experience alone, it will require a lifetime of no short duration to become a proficient.

FORCE OF PREJUDICE.—An English aper rather singularly explains the prejudice which the people of that country entertain against the use of Indian corn:—"An Englishman cannot reconcile himself to the idea of eating the boasted Indian corn, though cooked in all the multiform modes of a Yankee *cuisinier*. He feels in himself the dignity of civilization, and when eating his dish of maize he assimilates to himself the idea of the back woods of America, the desolate chaos surrounding him, and the monotony of life of the back settlers."



SAUSAGE STUFFER.—Fig. 106.

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In the families of large farmers, the making of sausages is quite an important item of "domestic industry." In former days, when sausages were filled by stretching the membrane over a small hoop, stuffing in the meat with the fingers, it was a slow and tedious business. A great improvement on this primitive mode, was the use of the tin tube, now common, by which a great saving of time, labor, and *patience* is effected. But where a large quantity of meat is annually to be worked up, the use of a machine, like that above delineated, will be found the most economical in the long run. The filling is performed with great expedition—one person accomplishing as much with the machine, as ten persons could effect in the same time by the ordinary mode. The cost of the machine, we believe, varies from \$3 to \$5, according to size.

SUPPOSED EFFECTS OF LIGHTNING.

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On the downs and heaths of some parts of Great Britain, the vegetation sometimes presents certain singular appearances, commonly known as "*fairy rings*." They are circles varying in circumference, in which the grass and other plants are much more verdant than on the adjacent ground. We believe the same phenomenon has been sometimes noticed in this country. These circles have been accounted for by various theories, no one of which, it is said, is sufficient to embrace all the facts. They have been often attributed to the springing up of fungi, which it is supposed spread in a circular manner, and enriching the earth by their growth, give unusual luxuriance to other vegetation.

In connection with this subject, and in reference to some accounts which have been published of the supposed effects of electricity on plants, a writer in the *London Gardener's Chronicle*, with the signature of "D. S. E., of Lambeth," relates the following circumstance. He and his companions were travelling in Portugal, when, says he—"we were overtaken on our road by one of those tremendous thunder-storms incident to hot climates," and which bear no comparison to the slight movements of the elements in our colder atmosphere. Whilst taking shelter from the fury of the storm, the forked lightning struck several objects not far from us. Soon afterwards, I observed several rings of smoke or gas, floating slowly in the air, which preserving their circular form, enlarging or diminishing alternately, until they ultimately settled in that form on the sward before us. In a day or two afterwards, on passing the same spot, I observed on the sward several rings, densely green, two or three inches wide, the grass of which rings had grown full an inch in that short time, and fungi were beginning to make their appearance. There must have been some very highly fertilizing property in the gas. In this country I have always observed that these rings make their appearance after thunder-storms; and I never yet met with a better solution of the phenomenon than that which accident afforded me, as above related."

HINTS ABOUT FOOD.—Roast meat contains nearly double the nourishment of boiled, but boiled meat is better adapted to weak digestion. Frying is one of the very worst methods of dressing food, as broiling is one of the best. Baked meat has a strong flavor, is deprived of some of its nutritious qualities, and is difficult of digestion. Spices, sauces, and melted butter, should never be used by an invalid.



FAT-TAILED SHEEP—Fig. 107.

ON page 88 of the current volume, we gave a cut of a variety of the fat-rumped sheep, which are found in various parts of Asia and Africa. In some parts of those countries, there are found, also, several breeds commonly known as *fat*, or *broad-tailed* sheep. They bear more or less resemblance to the fat-rumped, and some of them may be considered as having been originally derived from that variety; the variation having at first been only accidental, perhaps, and perpetuated by accident or design. There is considerable variation in the position and quantity of this singular fatty substance.

Mr. YOUATT, [treatise on sheep, pp. 113, 114,] observes:—"In some, as in the sheep of Syria, it accumulates about the upper part of the tail. Others have too large lobes of fat at the sides of the tail, reaching as low as the hocks. In a third variety, the masses of fat not only extend to, but chiefly occupy the inferior part of the tail, which is naked, and almost flesh-colored. Sheep of one or the other of these varieties, extend over Syria, Egypt, Southern Africa, Russia, India, and China."

The proportion which the weight of the tail in some of these sheep bears to the whole carcass, is quite remarkable. The usual dressed weight of the sheep, is from 50 to 60 lbs., of which the tail is said to make 15 or 16 lbs. Some of the largest sheep, which have been fattened with great care, are said to weigh 150 lbs., the tail making one-third of the whole weight. The tail is described as being composed of a substance between marrow and fat, serving very often, in the countries to which the animal belongs, instead of butter, and is used as an ingredient in various dishes. While the animal is young it is deemed to be little inferior to marrow.

Mr. YOUATT gives an extract from Russell's History of Aleppo, in which it is stated that the sheep of the largest size are "kept up in yards, so as to be in little danger of hurting their tails as they walk about; but in the fields, in order to prevent injury from the bushes, the shepherds in several places of Syria, fix a thin piece of board to the under part, which is not like the rest, covered with wool, and to this board are sometimes added small wheels; whence, with a little exaggeration, we have the story of the oriental sheep being under the necessity of having carts to carry their tails. But the necessity of carriages for the tails of the African sheep, mentioned by Herodotus, Rudolphus and others, is real. The tail of that animal, when fat, actually trails, not being tucked up like those of the Syrian sheep."

The above cut was originally taken from a ram belonging to the *Jardin des Plantes*, in Paris. Sheep of

this, or a similar variety, have been at various times imported to different parts of the United States. Stock produced by a cross of them with the common sheep, mature early, and are thought to have an increased tendency to fatten. This cross-bred stock was in considerable repute near Philadelphia, some years since, as early lambs for market. We have been told, however, that they are not as much esteemed at a more mature age, or for *mutton*. Butchers have objected that their fat is too much on the posterior part of the carcass, leaving the kidneys and other parts nearly destitute of any.

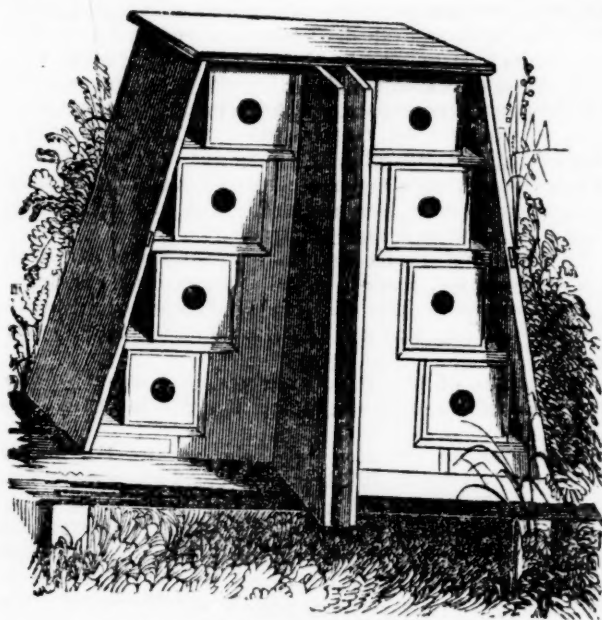
LARGE AND SMALL ANIMALS.

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THE opinion that animals of the same species consume food always in proportion to their weight, we believe to be an injurious error; we say *injurious*, because we think it operates as a barrier to improvement in many cases. We find some good remarks on this point in an essay on cattle, published in the Journal of the Royal Agricultural Society. The writer says—

"That animals do not increase in weight in exact proportion to the food they consume, has been frequently proved. The writer had at the same period, three cows recently calved, which for convenience of milking, were all kept in the same cow-house; they were fed with straw and as many turneps as they could eat; the average weight through the year was 80 stones, (1,120 lbs.,) 70 stones, (980 lbs.,) and 60 stones, (840 lbs.) The 80 stones cow and the 70 stones cow gave an equal quantity of milk; but that of the large cow was of better quality; the 60 stones cow gave more milk and of better quality than either of the two larger cows; the 80 stones cow and the 60 stones cow consumed an equal quantity of turneps; but the 70 stones cow ate one-fourth more than either of the others. The 80 stones cow was a fine animal, with great inclination to fatten."

HUMBUG.—A paragraph is going the "rounds" stating that there has been a "new kind of corn from the Rocky Mountains," grown near Albany the past season. A wonderful singularity about it is, that "each kernel is enveloped in a husk!" We suppose some one started this account of the *strange* production who did not know that it had been grown in various parts of the country for twenty years.



COLTON'S BEE-HIVE.—Fig. 108.

THE above cut gives a view of COLTON'S bee-hive which received the first premium of the N. Y. State Agricultural Society, at the Auburn meeting. In relation to the hive, the committee under whose examination it came, remark that they think it combines more advantages than any other with which they are acquainted; and they add—"the simplicity of its construction, the pyramidal form of the main chamber for the bees, and the side application of the drawers for the purpose of obtaining honey, warrant us in fully recommending it to the public."

The principal advantages of this hive, as set forth by the patentee, are as follows:

That from its superior convenience and adaptation to the habits of bees, they will accumulate honey more rapidly in it than on any other plan: that from the drawers being arranged on each side of the centre of the hive, (as shown in the cut,) the bees will fill from four to six of these drawers in the same time that they will fill two placed in the ordinary way, over the top: that the bees more readily enter the drawers on the sides without disturbing others, than when they are placed over the top: that the horizontal entrances to the drawers, (two in each, 4 inches long and $1\frac{1}{2}$ inch wide,) are much better than auger holes on the top: that the bees will attach their comb, which is usually $1\frac{1}{2}$ inch thick, to the shoulder, (which including the opening into the drawer, is $1\frac{3}{4}$ inch wide,) and consequently run one-half the comb up through the drawer, still leaving a quarter of an inch for ingress and egress: that the double covering, which by this hive, the bees are allowed, is warmer in winter and cooler in summer: that to remove the brood comb of an old hive, by breaking out one half in one year and the other half the next year, is better than any dividing of the hive, or driving-out process.

Our cut represents the front of the hive with the doors or shutters opened, showing the arrangement of the drawers, each having a piece of glass in the end, through which it may be seen when they are filled. We have never had an opportunity to examine this hive, but from the representations of experienced bee-keepers, and the plan of its construction, we have formed a favorable opinion of it. The name of the patentee is AARON COLTON, and his residence is Pittsfield, Vermont.

SWARMING OF BEES.—When bees swarm, they generally settle at first on some object near the hive, and if care is not taken to hive them while in this situation, they are likely to go off to the woods—sometimes to a great distance. Their flight is always direct, and sometimes astonishingly rapid, and when once they are fairly started, it is almost impossible to stop them. Various

expedients have been tried for this purpose, and generally with but little effect; such as making great noises with old pans, bells, firing guns, &c. But we lately received from Mr. SLEIGHT, of Geneseo, Ill., an account of a very simple means of arresting their flight, which he assures us he has proved to be perfectly effectual. It is to reflect the sun's rays directly upon them from a looking-glass. He relates several instances where swarms which were on the wing, endeavoring to make their escape, were suddenly stopped and made to alight in situations from which they were hived, by sending a few quick and vivid flashes of light from the glass directly into their centre. They appear to be greatly frightened or annoyed by this lightning-like appearance, and however rapid may be their flight, they will, it is said, at once come to a halt.

BENSON'S HYDRAULIC RAM.

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MR. TUCKER—We have lately been invited by Mr. Luther Griffin to witness the operation of one of these machines for raising water, set up by Mr. G. in this town for public inspection. The location of the machine was near a spring issuing from the base of a high bank, extending for considerable distance parallel with the stream produced by the spring, and near the summit of which was situated the farm-buildings of the occupant. Some six or seven rods below the fountain head, a small dam was built in order to give the fall necessary for the action of the machine, and some three or four rods lower down was the machine itself, so that the distance from the apparatus to the top of the bank was considerably greater than it was from the fountain. From this location we saw the water running up this steep bank, a distance of perhaps fifteen rods, in quantity sufficient to answer all the purposes of a large farm-yard and the house. But the water did not stop long in its aspiring course to subserve these purposes, for, by a continuous pipe, it passed, first, through the top of a high apple tree, (then bountifully laden with noble fruit,) from which, with the sprightliness of a squirrel for aught we know, (it "kept dark" in the pipe so that we could not see its motions,) it passed to the roof of a cow-house, which it traversed for 30 or 40 feet, when it became more aspiring and sought the roof of the barn, and after having reached the ridge of this, perhaps for the want of something higher to climb after, it passed itself down on the other side, at a height of seventy feet or more above its fountain; while the little toy pond that fed the saucy fellow that sent it up so high, exhibited a surface as serene and beautiful as though no dream of aiding or abetting in such roguish mischief had ever entered its bosom.

This illustration of the power so small in its compass, and so simple in its fixtures and operation, as you may well suppose, altogether exceeded our expectations, and were it not an age when the most wonderful things very often become the most probable, we should have doubted much whether such a performance could have been exhibited. But we saw the feat, and so did many others, so that if our own senses are to be credited, we must believe.

The construction of the power is very simple, and in our view not likely to become deranged or get out of repair in any of its parts, or more frequently than would be the case with any ordinary aqueduct. If in process of years the valve and the spring that regulates it should become "worse for wear," as they necessarily must, any common mechanic can replace them with the greatest ease.

The advantages of this machinery will doubtless be realized for many practical purposes. In places where buildings are situated on elevations, they will be found convenient for raising water from lower lands where the benefits of ordinary aqueducts cannot be realized. At large manufacturing establishments they may be employed to elevate and carry water from the main stream to reservoirs in any part of the premises, to provide against damage in case of fire. They may also be made

useful for filling tanks to water gardens, where the stream is lower than the garden.

They are so constructed, that where the fountain from which water is to be taken is not sufficiently large to answer the purposes for which it is conveyed, and at the same time become the propelling power to move itself, the machinery may be moved by water from another fountain or stream; as for instance, a spring of soft water breaks out from a bank, near which a stream of hard water passes. The hard water can be made to drive the machine while it carries the soft water to the desired point, or vice versa.

W. BACON.

Richmond, 1846.

RECLAIMED LANDS.

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In the Boston *Courier* we find the statements of some of the competitors for the premiums offered by the Middlesex (Mass.) Agricultural Society on reclaimed bog.

DANIEL SHUTTUCK, of Concord, has a tract of land containing twenty acres, which eight years ago was overrun with hard-hack, whortleberry bushes, alders, brakes, &c. It was first drained of the stagnant water; the alders and other bushes were next cut and burnt on the ground. It was then broken up as well as it could be, but the surface soil was so matted together by roots, that the plow would sometimes take up pieces of ten by twenty feet in extent. After the stirred surface became dried, it was burned or charred, the process of which is given as follows:

"First gather a few sods, quite dry, and set fire to them, and then pile on successive layers, keeping the fire from breaking out, as in burning charcoal. In this way, without any additional fuel, a large heap of excellent compost may be produced, while the roots and seeds of noxious weeds and bushes are entirely destroyed."

The ashes thus produced were spread on the land, potatoes or corn planted one or two years, and then laid in grass with a crop of oats or barley, the ground having been previously levelled as well as possible. It has produced from a ton to two and a half tons of good hay to the acre, since it was seeded down. It does not appear that the land has been manured, except that he has used on it guano and salt. The former, he says, does well, though he believes "the compost-heap will never go out of fashion." As to the use of salt, he says he "saw no good reason to repeat the experiment."

In concluding his statement, Mr. S. observes—"Some may be disposed to ask, 'is farming in this way profitable?' I answer, yes." He admits that to bring this land to its present condition, "required some courage, with a due proportion of faith and hope," but he says the value of the land has increased four-fold, and will alone pay for all the labor bestowed.

J. B. FARMER, of Concord, was another claimant for the premium on bog-meadows. His land was formerly occupied, he says, with "water-grass, or cotton-head, water-brush, and blue-vengeance, [what's that?] the value of which would very little, if anything more than pay for cutting." The soil is described as a fine black mud, of a crumbly nature, varying from fifteen inches to fifteen feet in depth."

He began by digging a ditch through the lowest part of the meadow, and another near the hard land, emptying into the main ditch. He has tried various modes of preparing such land for the cultivated grasses, and prefers the following:

"I plow any time, (as is convenient) after haying, until the ground freezes; after the ground is frozen, I cart on gravel, sand, or loam, as may be, to the depth of two and one-half inches, spread and let it remain, until the frost is out to the depth of about four inches, (there still being frost enough left in the ground to bear up my team,) then harrow it until the mud and gravel are well mixed, then let it remain until July; I then

sow on about one and one-half bushels of oats, one peck of herd's grass, and one-half bushel of red-top seed per acre; then harrow or rake them in, as the ground admits. The oats I let stand until they are ripe which will be about September. I have manured with compost, at the rate of twelve loads to the acre, soon after taking the oats off, and I have let it remain until late in the fall, then manured; and I have let it remain until spring, and then manured; but there was but little difference in the crop of grass."

He states that the hay on this land the next year after it was laid down, was estimated at three tons per acre, at the first crop. The whole cost of plowing, graveling, and sowing, was not far from twenty dollars per acre.

The editor of the *Courier* gives an abstract of the statement of another claimant, E. WETHERBEE, of Acton, as follows:—

"His meadow contains about six acres. He began his operations for reclaiming three years ago last spring. The bottom was too soft and miry to admit of driving on a team. It was not worth more than five dollars an acre. Adjoining it, on the westerly side, was a large sand bank, which gave an ample supply of material with which to commence the work of reclaiming. He began by carrying on the sand with wheel-barrows, till the surface would enable him to drive on a team. The whole was covered with sand from four to six inches in depth. A covering of compost manure was then spread over it. In the spring it was sown with herd's grass and red top. The quantity of hay produced the present year was three tons to an acre—herd's grass, [timothy,] red-top, and clover. The hay is worth ten dollars a ton—consequently the product is thirty dollars an acre, on land, which three years ago, would not have brought more than five or six dollars, if offered for sale. The whole expense of reclaiming was about twenty-five dollars an acre."

ADDRESS

Before the Berkshire Co. (Mass.) Ag. Society, on its thirty-sixth anniversary, by JOHN S. GOULD, Esq.

.....

WE find a copy of this spirited and well-written address in the *Columbia Republican*. The object of the author appears to have been to show the great advantages to be derived from an enlightened and systematized course of husbandry—the importance of exactness in all calculations, and the necessity of determining the products of the farm, as far as possible, by weight and measure, instead of being disposed of by guessing.

A great barrier to improvement in agriculture, the author of this address believes to be the prevalence of an idea among a portion of the farmers, that they have "nothing to learn." "Nothing," he says, "can be more disastrous to the cause of agricultural science than the prevalence of this stupefying idea. Never will agriculture assume her legitimate rank among her sister sciences, until the narcotic influence of this mental incubus is totally banished from the minds of the farmers of our country."

"It is true that many have assumed to teach agricultural science who were incompetent to the task which they have undertaken, many ponderous treatises have been written filled with words of 'learned length and thundering sound' which only 'lead to bewilder, and dazzle to blind,' while others, more intelligible to the great body of farmers, have been merely the results of experience derived from one geological formation, and one climate, which proves totally useless, when these important elements of vegetable nutrition are altered. The first class of works which treat of these abstract sciences from which the rules of practical agriculture must be deduced, are too technical for the comprehension of the ordinary farmer, or if he comprehends them they are useless to him because they fail to point out the relations and applications of the scientific laws which they develop to the practical objects of agriculture. A man may be able to state the doctrine of

gravitation in the clearest manner, without perceiving its application to the formation of a tear, or the flow of a river, or he may comprehend the law of capillary attraction as it exists in a glass tube, without perceiving its relation to the ascent of the sap in the minute vessels of a vegetable.

"Works of the second class fail to be useful because they leave out of view the general principles on which successful practices are based, and therefore can lead to nothing but disappointment when any one of the conditions are omitted on which these practices depend.

"But it by no means follows, that because the true laws of agricultural science have never yet been fully developed, that they are incapable of being understood. Thunder and lightning are phenomena which were familiar to the 'world's grey fathers,' as well as to ourselves, but the innumerable company of gifted intellects who during all intermediate times have observed them with wonder and awe, were incapable of penetrating the mystery which shrouded their production until Franklin pierced the veil, nor was their adaptation to the rapid transmission of intelligence suspected, until Morse pointed out the mode.

"The rays of light were as well adapted to painting the images of those objects from which they reflected at the time when the morning stars first sang together as they have been since, but it was reserved for the present generation to avail themselves of this curious property.

"The heavenly host have been the objects of the most intense contemplation by the most gifted minds for ages, yet no clue to their mysteries, no solution of their anomalies was attained till the days of Newton and Laplace. Encouraged by these and other similar examples, let us hope that there is yet a 'good time coming,' when all the dark spots that now obscure the science of agriculture shall be succeeded by a glorious light which will enable us to predict with certainty the result of every process, and finally enable us to attain to the very highest pinnacle of agricultural perfection."

PLOWING-MATCH.

[A plowing-match took place in Montgomery, Orange county, on the 28th of October, at which \$50, a sum which had been contributed for the occasion, was awarded in premiums. A correspondent who was present at the trial, furnishes us with the following account:]

The day was fine, and the attendance large. The competitors numbered 16; the ground was very smooth, and in excellent order, and some of the work was most admirably done. Capt. Robinson, of Newburgh, was here with a highly finished plow of Minor & Horton's, No. 22. His team, (horses,) were well trained to the work, and the plowman understood his business. He plowed his land, $\frac{1}{4}$ acre, in 34 minutes, and in a style that no connoisseur of plowing could find fault with. From beginning until the last, each and every furrow was as straight as a drawn line, and turned handsomely over. Our friend, Capt. R., takes great interest in plowing, and offers to make a large bet at considerable odds, that he can beat any one in the county,—the judges to come from a distance. John Wait held a plow that was got up in beautiful style by Minor & Horton, (No. 21,) for the occasion. The team was horses, a pair of poor, jaded hacks; but the plow was of such light draft that it required but little exertion for the team, and scarcely an effort for Mr. W. to hold it, so level and even did it run. The furrow-slice was not as wide as Capt. R.'s, and was cut and turned with the utmost neatness and precision—not the least shadow of any deviation from a straight line could be perceived. There was a plow from the shop of Speer & Wilson, Newburgh, held by Edward Wait. This plow, but little known, even in this county, made excellent work, and by many spectators was thought to be equal to any in the field. There were some four or five others that made very good work; and all the competi-

tors, I think, plowed their one-fourth acre within the hour.

Everything passed off satisfactorily until the report of the judges was read, when much disapprobation was shown; not so much by the competitors as by the spectators. The judges were selected in the morning, just before the plowing began, and are generally good practical farmers, and well-meaning men; but their views of what constitutes good plowing are sadly at variance with what we have been learning through the columns of the Cultivator, and other works on agriculture. We have been taught that good plowing consists in turning a straight furrow, with great exactness of width and depth, either flat, or slightly lapped. But our friends, the judges, at the grand match, would have us believe this is all wrong; that the right plowing is that which leaves the furrow on the edge, or in as rough a state as possible. They say that this is the best way "to plow for a crop." Now, if this is so, if the rough, broken furrow is the best plowing, we shall have to discard the so-called improved plows, and return to the old-fashioned "hog-plow;" and as to having plowing-matches, they would be a great farce; for who wants to witness a thing where neither skill nor judgment are called into exercise. SAMUEL WAIT, JR.

Montgomery, Oct. 29, 1846.

ADDRESS

Delivered before the Greene County Agricultural Society, by Hon. ZADOCK PRATT, President.

At the annual meeting of "The Greene County Agricultural Society," held at Cairo, it was

RESOLVED, "That the thanks of this Society be presented to the Honorable Z. PRATT, for his excellent and appropriate address, and that the same, be published in the County papers, and in the Cultivator and Farmer's Library."

H. D. H. SNYDER, Sec'y.

MEMBERS OF THE GREENE CO. AG. ASSOCIATION:

Gentlemen—You have chosen for your president, one who does not boast the graces of eloquence, and you cannot, and do not expect from him, on this occasion, a display of fine words and happy fancies; but rather a plain statement of true and practical ideas. You are working men, and you have chosen a working man, and it is on this account that your choice confers honor upon me. It was in Congress, where my strength has always been given to the protection and advancement of American labor, that I heard of this new evidence of your kindness and confidence; and I thank you for it, and for thus affording me another opportunity, and a more honorable place than the halls of legislation, to express my high sense of the dignity of those occupations, the interests of which, this society is so happily designed to promote. I need not say to those who know me, that through life I have practiced and encouraged industry, and exerted my influence in every sphere (according to my ability,) in promoting the true welfare of my fellow men. I have acted upon the principle, and so have you, that it is not mere physical or mental structure that makes the man, in the best sense of the word, but the mode of life. It is not to have a head—a heart—an arm—a human body and soul, that makes one worthy of so noble a name; but to give the wisdom of that head—the strength of that arm—the combined energy of all the powers to constant and useful industry. The hard working farmers and mechanics of our country are its glory and strength; their labors have produced wealth; their honesty, their patriotism, and its faithfulness to the institutions of liberty, have given it its standing among nations; and in times of danger, their strong arms and firm hearts are its safeguard. He is not the lord of the soil who calls so many acres his own, yet has no power to use them; but he, rather, who plows and sows, and reaps and scatters abroad over the country, the products of the glorious harvest, to feed the hungry and clothe the naked. He is not master over earth's treasures who has the bare

title to a mine; but rather he whose skill and industry raises the ore, reduces the metal, moulds it into countless shapes of usefulness, and sets to work the gigantic engine with its thousand hands. Farmers and mechanics if faithful to their duties, are men, in the full meaning of the word—useful men; men that the world cannot do without. Their occupations develop all the faculties, and produce “sound minds in sound bodies;” they accustom men to rely on their own strength, to love labor, and to feel that independence of other men, and that contempt for little difficulties which are the foundation of true greatness of mind.

These, fellow working men, are the occupations, this is the land,—ours are the institutions, and our fathers the stock which have produced the noblest race now living; and shall, if we value and use our privilege aright, yet exhibit human nature in its highest standard of perfection. We have resources and advantages possessed by no other nation; and a people better fitted than any other to develop those resources and improve those advantages. We need little aid from abroad, for we have every thing at home; we need little teaching from strangers, for we know best what is best for ourselves. According to my observation, farmers are too easily persuaded to look to other states and countries for the means of increasing the products of their fields, and improving their flocks and herds; we are not in England, nor at the north, nor at the south; and neither English, northern, or southern improvements are what we want. We want improvements of our own, suited to our own wants and position, such as none can make for us as well as we can make them for ourselves. Is it not better, as a general principle, both as to animals and vegetables, to choose and improve the best of such as are already adapted to our climate and soil, than to be shifting and changing, in the vain hope of arriving, by some short cut at such results as God intended we should accomplish only by close attention and the sweat of our brows?

Of all the animals created for the use of man, none has been the subject of so much observation and esteem as the horse. In their native wilds, nature forms them into herds and groups, and gives them in command of the strongest and fleetest; and by this and other wise arrangements, of which only God is capable, guards the species against general degeneracy. The same kind care has been shown in special provision for the security of every race of animals; but when this security is taken away, and they are brought under the dominion and management of man, the most skilful attention is required in changing the general character of the species, and producing and improving distinct breeds, each adapted to its own specific purpose. It is not every breed that is suited to every locality; for climate, and the face and food of different countries, will modify the shapes and qualities, not only of the domestic animals, but of the human species; the raw-boned, industrious, hardy, and temperate man of the north becomes enervated and indolent, both in the mental and physical constitution and energies, in tropical latitudes where he reposes in the lap of luxury, enjoying without exertion, the abundance which nature lavishes around him.

The horse, best fitted to travel in the sun and sands of the south, is the descendant of the small, hard-boned, light-footed Arabian, with his high courage and silken coat; while grain-growing Pennsylvania and Ohio, with their cumbersome waggons, prefer to use a heavy corn-fed breed, that will throw a greater weight upon the collar. The north again is better served by a more compact and active race of middle size, endowed with much more strength in proportion to their weight, and greater powers of endurance; who bravely champ the bit, and nobly strain to the load with lion-like vigor; rejoicing at toil and answering to the driver's voice with proud step and martial air, as if it was the trumpet calling them to battle. Thus the wants and peculiarities—the soil, climate, and uses of each district—require and produce that peculiar breed which is best suited to itself. What better stock do we need than such as can be bred from the best of those we already have. The teams of Z. Pratt & Co., composed of a

single span, (natives of our own region,) are in the habit of drawing from Catskill over the mountains to Prattsville and back, loads of hides and leather of from thirty to fifty, and even sixty hundred weight, each wagon or sleigh not included, the distance being thirty-seven miles, and requiring three days to go and come.

The quantity thus transported within the year, is nearly two and a half millions of pounds; and the expenses the last season, including all risks and charges, was only thirteen cents a hundred. During twenty years of this service, which I make bold to assert has not been equalled by horses of any other district or country on the globe, not a horse has been injured, in the hands of a careful driver, and to the honor of the county be it said that we have never lost a hide or side of leather, of the million and one-half thus transported.

I am aware that there are those, and among them, my friend Mr. Skinner, the experienced editor of the Farmer's Library, who have strongly recommended mules for slow and constant work; on the ground of much longer life—greater exemption from accident and disease, and more economy in feeding; but experience, the best of teachers, seems to show that the mule and the slave are destined to work together in the sunny south—both are uncongenial to us and our latitude.

The horse which we have is just the kind that we need; and if we pay proper attention, in breeding, to the selection of both sire and dam, we shall soon have, of our own raising, a class of animals that for our purposes cannot be excelled; already, indeed, two of the most celebrated trotters the country ever saw, have been raised in our immediate neighborhood. We do not want such horses as roam half wild, over the pampas of South America; they are small, light, active, always on the gallop, and admirably fitted to chase the ostrich over the sand, or the ox through the tangled grass; but when put to severe tests, they are found wanting in strength, power of enduring fatigue, and even fleetness. Neither do we want the English dray horse, which represents the other extreme; he is large and strong, like the ox, and like him, too sluggish, heavy, and unwieldy.

The requisite vigor and spirit are not to be looked for in overgrown size and fatness in the horse, any more than in the man—animation that ensures perseverance—the muscle that gives activity, and that ardor and ambition which never permits them to look back and balk, are what is wanting in both.

What I have said as to horses being improved on the foundation of our native stock, applies with equal force to cattle.

In every settlement, a stock of good cattle is of the highest importance; and every sagacious farmer will learn to choose for breeders, such as promise best for his particular object, whether it be butter, beef, cheese, or labor; and he should study this subject with a deep feeling of scientific interest, as well as for the sake of gain. Let his first care be to put aside the very best progeny of his stock, and never permit his dearest friend to cast a wistful eye on them—nor be tempted, by any price, to sacrifice them to the butcher's knife. If he has a favorite cow of the real fill-pail breed, let him reserve and turn out that one of her calves that most resembles herself, before it grows old enough to be sold to the butcher, and always guard it with special care.

We read of premiums being given to large imported cows that have yielded some thirty quarts a day; but every dairy woman will tell you that it is not the cow that gives the largest quantity at a milking, that makes the best one in the long run. A better one still, is she that keeps on through the year, giving milk for your dairy, and cream for your table, in winter as well as summer, let the feed be short or long. Run fast, is a good name, but hold fast, is a better one.

In the Agricultural Journals, I have read an account of a middle sized country cow; I refer to the celebrated Oaks cow, bought out of a drove in Massachusetts for a mere trifle. Her history illustrates two things worthy of note: First, what we can obtain from the best of our old breed; and secondly, how much de-

depends on good feeding; and just as it was with the Oaks cow, so will every man find it with his farm. If he won't feed his farm, and that often and well, he need not expect it long to feed him. Always taking out of the meal tub, and never putting in, will soon come to the bottom, as poor Richard says. But to return to the Oaks cow, that did so much honor to the name of Caleb Oaks; it is stated on the most unquestionable authority, such as satisfied the Massachusetts Agricultural Society, that in the first year, with ordinary keep, she made but 180 pounds of butter;—the next year she had twelve bushels of corn meal, and then gave 300 pounds of butter; the next, 35 bushels, and she gave more than 400 pounds; the next year she had a bushel of meal a week, and all her own milk skimmed, and then she gave from the 5th of April to the 25th of September, the day of the show, 484 pounds, besides suckling her calf for five weeks. She was exhibited, and deservedly took the premium on the last mentioned day; and will carry down her owner's name, with credit, to posterity, as long as oaks grow.

After all, my friends, in respect to cattle, the true question is, not what breed can be made the heaviest, if stuffed with food, as in some countries they stuff geese and turkeys, until no more can be crammed down their throats; but what breed, according to our locality and objects, will do the most work, or yield the greatest weight of milk, butter, cheese, or beef, as the case may be, from the food at our command. In cold, mountainous districts, says a writer of high authority, it is necessary to restrain, within certain limits, the ambition of having highly improved stock. In such circumstances, the grand point is to have a hardy race, not over nice in its food, which consists, through a considerable portion of the year, of but short and coarse herbage. The best milch cow, generally, as every good dairy woman will tell you, is the one that, while she is at the pail, turns everything into milk, and is least disposed to be or to look fat.

The same considerations that apply to breeding domestic animals, apply also to vegetables and grain. We cannot contradict nature, but we can co-operate with her, and working in her methods and in conformity to her laws produce all the results that the Creator ever designed to put within our reach. A man passing a few years ago, by a field of ripe wheat on Long Island, was struck by the rich appearance of two or three heads that grew near the road, and hung down as if the grain was of great weight. He stopped and plucked those heads, and sowed them the next season in a place by themselves, and so cultivated them year after year till they had increased to over a hundred bushels, that for color, weight, uniform plumpness of the kernels, are, perhaps, not surpassed in the country; at least, they are expected to take the premium at the approaching fair of the American Institute. This shows what we should do if we wish to carry out nature's plans, and finish what she had begun. The very best specimens should be chosen from those that have been grown on our own, or on a neighboring farm, instead of sending to a distance for such as, when we get them, will be forced, by the irreversible laws of soil and climate, to change their character, and adapt themselves to their new locality. The high scented Cuba tobacco loses its flavor on being transplanted to other countries. So the eight-rowed Dutton corn of the north refuses to exchange localities with the gourd seed of James river. Wheat, too, changes its character, and cannot be transferred from one climate to another, without losing its original color and other characteristics. As well might you attempt to transplant the beautiful hemlock of our mountains, where the God of nature placed them, to regions designed for the live oak and the olive, as to neglect the peculiar varieties of grain that our own region produces in perfection, and cultivate those whose distinctive properties are the result of a different soil and climate.

Therefore let me urge upon you to hold on upon what you have proved to be good. Choose always the best of its kind in the animal and vegetable departments,

and depend on your own clear heads and strong arms for the rest. You are in the very middle region between the extreme rigors of the north and the enervating heat of the south—in the finest climate that the sun ever shone upon; and of all positions, the one best adapted to develop the human faculties and to bring forth the noblest displays of mental and physical energy, and, in a word, to grow the whole man. Rely then on yourselves to do your own work; to make your own laws; to improve your own animals and agricultural products; and to pursue, on all subjects, those investigations, and make those discoveries and arrangements, which your own interests require. Bring up your children to respect the character and to love the labors of the farmer and the mechanic; for on them at last, as I before said, does every country depend for support in peace and defence in war. Who does the world pronounce the greatest men that ever headed patriot armies in defence of freedom, in ancient or in modern times? Was not Washington a farmer? he whose fame will be as eternal as our own Catskill Mountains!

"Great Cincinnatus at the plow, with greater glory shone,
Than guilty Caesar e'er could do though seated on a throne!"

And again;—among all the benefactors of American industry, who have contributed most to promote our national wealth and honor? With pride let me name two brother mechanics, Whitney and Fulton!

Let us, gentlemen, follow these bright examples; let us study to inform our minds and improve our hearts, and enlarge our hearts, and then we shall not only know how to increase our crops, and improve our fortunes, but how, at the same time, to benefit our country and our race.

Washington was great in war, but greater still in peace. He presided with unsurpassed wisdom and dignity over the affairs of State; but added increased leisure to both by the calm contentment of Mount Vernon. Every farmer cannot expect to occupy so high a position or gain so much applause; but every one ought, in his own sphere, to practice the same strict integrity and faithful performance of duty; and be, in his principles and conduct, a Washington—possessing the same virtues, though he may never have the same glorious opportunity to exemplify them. Every mechanic cannot expect to make so useful discoveries as the steamboat and cotton-gin; yet every one can and ought to acquaint himself with all the mysteries of his art, and give diligence to make himself as capable and his work as nearly perfect as possible, and do all that Whitney or Fulton would have done in his place.

I rejoice to be able to say, not only that this is the course our farmers and mechanics ought to pursue, but also that to a great extent they are pursuing it now. The formation of this, and other like associations, and the variety, and standard worth of our many periodicals which are devoted to agriculture and the mechanic arts, show the spirit of our people. The benefit which the country receives on account of the free interchange of thought, and general diffusion of intelligence through these channels, is incalculable. An intelligent and well informed gentleman from the south, once asserted that through the influence of the Albany Cultivator alone, the wealth of that part of the country had been increased more than two millions of dollars.

Before I close these remarks, let me suggest (being myself a father, with some opportunities of observation,) that you should incline your sons above all things, to prize that honest station, however humble, which is gained by personal industry, and enjoyed without dependence on the capricious breath of party, or of any mortal man in power.

Any honest pursuit will be esteemed by a young man, of independent spirit and honorable ambition, in preference to being seen lounging in the anti-chambers of public departments, and the lobbies of the capitol, a suppliant for the precarious emoluments of office. Let it ever be deemed a high honor by those who are qualified to be called on to serve the people; but when you see your son, made in the image of his God, inclined to quit the handles of his plow, or throw down his hammer and sell his birth-right for a mess of pottage—put

into his hands the homely fable of the dog and the wolf, which inculcates the love of independence as a boon above all price.

It is the independent spirit of our people that ranks them above all other nations of the earth: because each man has, in himself, the ability and resolution to accomplish his ends of and by himself; it is on this account that an American can be cast penniless and alone in any corner of the earth, and amongst any people, and instead of wasting his life out, a poor and despised stranger, he will summon his energies and bear himself like a conqueror.

Whatever the natives are doing, he does it better than they; he makes the most money—exerts the most influence, and soon becomes a leader and a prince among them; from soling a shoe to heading an army, he shows himself in all things capable, in all things superior; and having accumulated sufficient fortune for himself, and honor for his country, abroad, he returns to lay at her feet the spoils of other lands, and enjoy, in his native home, the society of equals. What does such a man want of official patronage or protection. He scorns to eat the bread he has not earned, or to enjoy honors he has not deserved.

I should give, however, but half the praise that is due to my countrymen, did I not add that, remarkable as they are for independence of spirit and ability to take care of themselves, they are equally distinguished for benevolence, true politeness, and a liberal and enlightened regard for the best interests of others. No where on the globe are women treated with more tenderness and respect, and no where are they more worthy of it. It is, indeed, under the gentle and kindly influence of mothers, sisters, and wives, that the best points of our national character have been formed; and who would not yield to that influence? If men have all the strength, women have all the loveliness; strength is needed to protect loveliness, and loveliness is equally needed to adorn strength.

Depend upon it—the young man who pretends to despise the society of virtuous females, does so because his conscience tells him, secretly, he is unworthy of it.

Intending always to practice what I preach, it has been with me a matter of pride to appear before you to-day, clothed in the produce and manufacture of our own country. With the labors of our own husbandmen, and the skill of our own mechanics, no man need send abroad for subsistence or clothing. For my own part, so fully am I impressed with the importance of looking for comfort and happiness, within ourselves, that I would have the very children in our schools taught to sing the old song, which says:

"I'll eat my own ham—
My own chicken and lamb,
I'll shear my own fleece and I'll wear it."

Z. PRATT.

ENTOMOLOGY.

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L. TUCKER, Esq.—Being very desirous of completing the history of some of the insects that are injurious to wheat, I take the liberty of writing to you, to beg the favor of your aid in promoting my object.

In the sixth volume of that most excellent paper, "The Cultivator," there is a description of a depredator on the wheat, stated, by the lamented Willis Gaylord, Esq., to be a caterpillar, provided with 12 feet, six of which are near each extremity of the body, and having the power of spinning and of suspending itself by a silken thread. Mr. Gaylord says that it is of a yellowish brown or butternut color; that it not only feeds on the kernel in the milky state, but also devours the germinating end of the ripened grain, without, however, burying itself within the hull; and that it is found in great numbers, in the chaff, when the grain is threshed. (Cultivator, VI., p. 43.)

Mr. Nathaniel Silt, of Warren, Penn., has given a somewhat different description of it. (Cultivator, VI., p. 21.) On threshing his winter-wheat, immediately after harvest, he found among the screenings a vast

army of this new enemy. He says that it was a caterpillar, about three-eighths of an inch in length, when fully grown, and apparently of a straw color; but when seen through a magnifier, was found to be striped lengthwise with orange and cream color. Its head was dark brown. It was provided with legs, could suspend itself by a thread, and resembled a caterpillar in all its motions. Insects of the same size as these caterpillars, and of a brownish color, have been observed in various parts of Maine, where they have done much injury to the grain, devouring the kernels in the milk, and also after they have become hard. These wheat-worms, or wheat-caterpillars, are supposed by some persons to be identical with the clover-worms, found in clover, and often seen spinning down from lofts and mows where clover has been stowed away. A striking similarity between them has been noticed by a writer in the "Genesee Farmer," as quoted in the seventeenth volume of the "New England Farmer," p. 164.

If these creatures be really caterpillars, as they would seem to be, from these several accounts, they must eventually change their forms, first to chrysalids, and then to winged moths. In order to go through their transformations, they may either, like the canker-worms, go into the ground, or they may conceal themselves in rubbish or in crevices about the barn, before turning to chrysalids. If a considerable number of these caterpillars were confined in a box, partly filled with moist earth, and covered with a little moist moss, (sphagnum,) they would probably complete their transformations therein, but they must not be entirely excluded from the air more than a day or two, before they have changed to chrysalids. Secured in this way, the insects would probably bear transportation to Boston. If a collection of them, or of the chrysalids, properly secured, could be sent to the care of my friend, Joseph Breck, Esq., agricultural warehouse, North Market street, Boston, they would reach me immediately, and the receipt of them, in good condition, would gratify me very much, and would enable me to obtain the insects in their winged state, and thereby to determine their scientific characters.

As "The Cultivator" has an extensive circulation through the region where these insects have prevailed, if you should be pleased to call the attention of your numerous subscribers to the subject, it is my hope that a return corresponding to my wishes may be obtained.

THADDEUS WILLIAM HARRIS.

Cambridge, Mass., Nov. 9, 1846.

.....

REMARKS.—The insect concerning which information is requested in the above communication, or a very similar one, was known to us several years since. In 1834, while the writer was residing in Maine, it occasioned him considerable damage by attacking his wheat. At the time the wheat was threshed, (the month of September,) the insect was found among the grain, in great numbers, both in the larvæ and perfect state. It is believed to be the same which at one time created considerable alarm in central and western New-York, under the name of "wheat-worm," and which, by some persons not familiar with insects, appears to have been considered identical with what in New England, and some other sections, was mis-called "the weevil."

We are inclined to think it is the same insect that is described by CURTIS, in one of his papers on the "Natural History and Economy of various Insects affecting the Corn-crop," &c.—Journal of the Royal Agricultural Society, vol. V. pp. 481, 505. He places it with the family of Night-moths, under the name of *Noctua cubicularis*, (*N. quadripunctata*, of Fabricius, *N. segetum*, of Esper.) His description of the moth is as follows:

"It is of a brownish mouse-color; antennæ like bristles; eyes fuscous; palpi short and scaly, with a pitch-colored patch on the outside; abdomen rather slender, obtuse at the apex in the males, conical in the females; wings lying horizontally and incumbent in repose, forming an elongated triangle, superior long and narrowed at the base, with three irregular and crenated transverse lines, forming little black spots on the costa;

the first is near the base, the second before the middle, and the third beyond it; between these is a round and kidney-shaped spot; between the third and the posterior margin, which has a line of black dots, is a situated ochreous line, reddish and suffused on the inside, the external space dark fuscous; inferior wings pearly white, slightly tinged with brown next the cilia, the nervures brownish: length 6 lines, expanse 14 or 15 lines."

Mr. CURTIS observes that in England—"This moth is common in hay-fields and about hay-ricks in May, June, and July, as well as on willows, in gardens, &c." This would appear to strengthen the idea that it is identical with the insect, the larvæ of which is sometimes called "clover-worm."

Dr. HARRIS' treatise on insects is an excellent one, and reflects great credit on its author; but its value would have been greatly enhanced, if it had been accompanied by illustrations. The work was originally written at the instance of the Legislature of Massachusetts, by whom the expenses attending its publication were, we believe, principally defrayed. The State certainly deserves credit for the liberal discernment and regard to the interests of the people, which it thus evinced; but a work on which so much care and labor has been bestowed, should be made as perfect as possible; and we cannot but hope that in bringing out a new edition, the State will furnish the necessary aid for accomplishing the improvement suggested.

NEW-YORK STATE AGRICULTURAL SOCIETY.

At the regular monthly meeting of the Executive Committee of the New-York State Ag. Society, for October, the following resolutions were unanimously adopted:

On motion of Mr. VAIL, of Rensselaer,

Resolved, That the thanks of the society be presented to JAMES LENOX, Esq., for his donation of 30 copies of "Washington's Letters on Agriculture."

On motion of the PRESIDENT,

Resolved, That the thanks of the society be presented to Mr. GEORGE FORDON, of Geneva, for the skill and spirit he has manifested in breeding and exhibiting at our shows so many fine farm horses.

At the meeting of the Executive Committee for November, the following resolutions were adopted:

A letter having been read from F. E. L. Fischer, Director of the Imperial Botanic Garden, St. Petersburg, Russia, announcing that he had forwarded to the Society a copy of a new Botanical work, just published at St. Petersburg, on motion of Mr. TUCKER,

Resolved, That the thanks of the N. Y. S. A. Society be presented to F. E. L. Fischer, of St. Petersburg, Russia, for the donation announced in the above letter, and that a copy of the Transactions of the Society for 1845, be forwarded to him.

On motion of Mr. TUCKER,

Resolved, That the thanks of the Society be presented to its President, Mr. SHERWOOD, of Cayuga, for a copy of the Census of the State of New-York for 1845.

Resolved, That the thanks of the Society be presented to JOSEPH FELLOWS, Esq., of Geneva, for his donation of fifty dollars in behalf of the Pultney estate.

On motion of Mr. VAIL,

Resolved, That the Recording Secretary and Treasurer procure Daguerreotype portraits of all the Presidents of the Society, and that the Treasurer be authorized to pay for the same.

On motion of Mr. SHERWOOD,

Resolved, That the Treasurer of the Society be directed to keep charge of the rooms of the society; and to provide for its being kept open for the business of the Society, until further action of the Executive Committee.

On motion of Mr. VAIL,

Resolved, That the President, Mr. Prentice, and Mr. McIntyre, be authorized to invest in bond and mortgage, such sum of money as is now in the treasury, as

will not be needed to pay premiums now awarded, and to pay also contingent expenses of the Society.

On motion of Mr. SHERWOOD,

Resolved, That the Treasurer employ some suitable person to color the plates of the "Jardin de St. Petersburg," at a price not to exceed twenty-five cents for each plate.

The Committee then adjourned to the 2d Thursday of December next, at 10 o'clock.

Present—Mr. Sherwood, Mr. Vail, Mr. Stevens, Mr. Tucker, Mr. McIntyre.

VARIETIES OF FRUITS AND VEGETABLES,

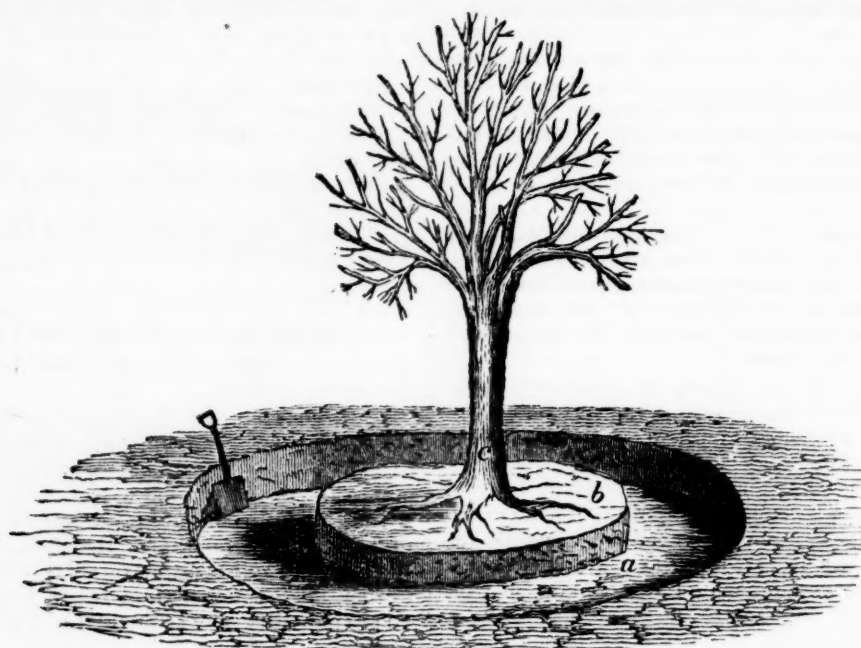
Affected by Soil and Climate.

It is well known that varieties of fruit are greatly affected by soil and climate. For instance, a standard of the relative excellence of different kinds of apples and pears, drawn up for a particular section, would be wholly inapplicable to other sections; with a change of location, the quality of the fruit would change, and the standard might be reversed. All this is often witnessed in the transfer of fruits from Europe to this country, and it is not uncommonly seen here in shifting from one district to another.

Does not this principle hold good in reference to varieties of grain and vegetables? We think it does. Some kinds of potatoes, for example, appear to do better, compared with other kinds, in some neighborhoods, than they do in others. Some sorts have also been known to be more exempt from blight in some places, while in other places they have failed. Dr. EMMONS, in the *Quarterly Journal of Agriculture*, has some sensible remarks on this subject. "At first view," says Dr. E., "it seems that the same variety ought to hold out at all times and all places against the enemy. But it may be, after all, that varieties, like species, require a particular soil to bring them to a high standard of excellence. For instance, one variety attains its standard of perfection in a light soil only, whereas another variety requires a strong clayey soil. They are secure from disease only when they are cultivated on that soil which they require to reach their standard of perfection. Now some varieties, like some species of plants, are not so fastidious in their food, and hence do well if they have but a middling chance. The Merinos, or Long Reds, seem to be of this description. However all this may be, it is an important inquiry what soil is best suited to a given variety of potato. We know that some apples, as the Newtown pippin, must have a deep strong soil, and comes to nothing when planted in a poor soil. And why should there not be the same variety in the habits of varieties of potatoes, as in apples and other fruits."

ARTICHOKES.—Mr. NOBLE, of Massillon, Ohio, still continues the culture of artichokes. In a conversation we had with him a few months since, he stated that if it had not been for this crop, (of which he had several acres,) last season, he did not know how he could have got his sheep and other stock through the winter. He cut the tops and dried them for fodder; and the stock ate nearly the whole clean, scarcely leaving even a piece of stalk. The roots mostly remained in the ground till the frost had so far left it in the spring, that they could be dug. The tops, he says, yield from 5 to 6 tons of fodder per acre.

OATS AND PEAS.—The N. Y. *Farmer and Mechanic*, says that Elijah Fillmore, of —, sowed last spring, one bushel and three pecks of peas, and two bushels and twenty quarts of oats, on one and a half acres of land, which yielded 54½ bushels of peas besides the oats. This piece of land, it is said, was cleared by his father 76 years ago, and has been under the plow ever since, except that it has been twice seeded down, about 5 or six years each time.



RENOVATING A PEAR TREE.—Fig. 109.

J. B. W., gives, in the *Horticulturist*, (from which work we take the above cut,) an account of the manner in which he renovated an "outcast" pear tree. The writer of that article resides in Westchester county. He says that his Virgalieu pear trees, though they once bore excellent crops, had become nearly barren—producing "only cracked, blighted, miserable fruit." He determined to see what could be done for them, and began with a trial with two trees in October, 1843, since which, he says, he has taken two crops of beautiful fruit—as good as grew on his farm twenty years ago.

He describes the process he pursued with the trees as follows:—

"I first scraped off all the rough outer coat of bark, and coated the trunk of the tree over with soft soap, put on with a paint brush. I next cut out about one-third of all the poorest branches, and shortened the head of the tree one-third, by 'heading back' the principal limbs, covering the wounds after paring them, with the 'shellac solution,' (the best thing I have ever tried,) recommended on page 32 of the 'Fruits and Fruit Trees of America.'

"I then dug a trench, four feet wide around the whole ball of roots, very much as if I were going to transplant it. I left a ball of roots, *b*, untouched about six feet in diameter. The roots—all the roots, large or small—that extended beyond this ball, I cut off; and I should judge that I cut off about one-third of the roots; or, as you advised me, about an equal proportion to the branches reduced.

"The trench itself, which was four feet wide, I dug twenty inches deep; and carted away all the old soil from it to another part of my garden. I next carted in an equal quantity of soil from a field of good pasture, where the sod had not been broken up for several years. I drew this earth, composed pretty largely of the sod itself, and filled the trench around both trees.

"To each tree I applied the following substances, viz: two bushels of refuse or scoriae from a blacksmith's forge, two bushels of charcoal, pretty well broken, and two pounds of potash well pulverized. These substances I had on the spot, and mingled them with the fresh soil as it was put in the trench. After the trench was full of soil containing these stimulants, I had the whole of its contents thoroughly intermixed, by turning them over and over again with the spade. This is the whole of the process. Now a word about the results.

"The first summer after the trees had been operated upon—that of 1844, I was surprised and delighted with

the luxuriance and vigor of the new growth. It was very healthy, and had the appearance of that of a very fine young tree. Suffice it to say, the tree had formed a new and handsome head.

"Next season, 1845, it blossomed moderately. But almost every blossom set, and gave me a fruit. Every fruit, to my great joy and satisfaction, was large, fair, and smooth; the growth was clean and healthy, and the leaves dark green in color.

"This year, I have had a fine crop: two bushels from one tree, four bushels from the other. They were superb fruit—genuine, old-fashioned Virgalieus; and I cannot doubt that my trees will continue to bear such for many years."

REVIEW OF THE SEASON.

.....

THE most remarkable characteristic of the past season, may be said to have been the prevalence of a high degree of heat for a longer period than usual; the weather having been mostly very hot from the first of June to the 10th of September. In general, there has been a greater supply of moisture in the shape of rain, than in 1845. Drouths have occurred in some sections, but not to the same extent they did last year. The seaboard, from Texas to Rhode-Island, has had quite an unusual quantity of rain.

Upon the whole, the season has been favorable for most crops. In some sections of the western part of the country, as in the valley of the upper Mississippi, we have heard of some injury from drouth. From the central and western portions of this state, also, we have heard the same complaint.

Wheat has yielded well, generally—the crop giving, it is believed, a greater aggregate quantity for the whole country, than has ever been produced in any previous year. Accounts from the southern states, speak of the crop having been unusually large; but it appears that considerable damage was sustained in consequence of heavy and long-continued rains; which, occurring while the grain was standing in shock, caused it to sprout. In some of the southern districts of Pennsylvania, the Hessian fly, (*Cecidomyia destructor*), damaged the crop, and in the county of Onondaga, and some contiguous counties, in this state, the ravages of the "weevil" are stated to have been quite injurious. In the western wheat-growing states,—Ohio, Indiana, Illinois, Wisconsin, Michigan, &c., the yield is everywhere spoken of as uncommonly heavy, and of excellent quality.

Indian-corn has proved a heavy crop over the whole country. We do not recollect a year when this crop

has been so universally good. It is gratifying that this great staple of our country has come in so abundantly, as in consequence of the increasing demand for it in England, it now bears a good price in our sea-ports. Some cheap mode of kiln-drying, or preparing this article for transportation, is highly desirable. Its liability to injury by fermentation, or to become *musty*, when kept for a length of time in bulk, is a serious drawback on its value for exportation; and probably prevents it from being generally received in England in that perfectly sweet condition, necessary to allow the people to form a correct estimate of its excellence. Hence, we presume, chiefly arises the "prejudice" which is said to exist against the use of Indian-meal in England and Ireland. If the inhabitants of those countries could have the article prepared in its best forms, as it is *sometimes* to be met with here, we cannot believe their taste is so opposite to ours, that they would not relish it. Every good American house-wife knows that for culinary uses, it is important that corn-meal be *fresh and perfectly sweet*; and when corn or meal is only transported, by the ordinary modes, from the interior of our country to the Atlantic ports, it is not easy to find it in that condition.

Rye, barley, oats, and buckwheat, have generally given good yields.

Fruit, taking the country together, has probably been as good as usual. Peaches were unusually plenty in the eastern states, though the quality, from a deficiency of flavor, was rather inferior to the product of seasons in general. Apples are more plenty than last year, notwithstanding the deficiency in some small districts, caused by spring frosts.

Potatoes—a crop, which, though of less comparative value here than in the British islands, is yet of great importance—have in nearly all parts of the country, suffered greatly from the malady known as "rot" or "potato-disease." Compared with 1845, we cannot say that the damage from this cause has been greater in this than in the former year. The injury occurred, for the most part, at an earlier period, the present year—(the first week in August)—and the rotting appears to have been generally so far checked, that at the time of digging the crop, the tubers found were mostly sound. We have, however, heard of some instances in which the rot seemed to come on a second time, towards the latter part of the season. The condition of the crop since it was secured, seems to be quite various in different places. A farmer from central New-York, informed us a short time since, that his potatoes were rotting so badly in the cellar, that he had been under the necessity of sorting them all over, and even with all precaution and care, he feared he should not be able to save any for seed. We have heard a few instances of their rotting in the cellars in the neighborhood of this city; but are, nevertheless, inclined to think that they are in better condition, in most cases, than was the crop of 1845 at the same time in the year.

As to the *cause* of this destructive malady, as we have said on a former occasion, we are convinced but little is known; and we are equally convinced that no reliable remedy has been discovered. To these conclusions have all come, so far as our knowledge goes, who have carefully considered the matter, whether in this country or across the water.

At the late meeting of the British Scientific Association, at Southampton, where this subject was discussed, Prof. PLAYFAIR said—"it was of no use to attempt to account for an affection of which they were entirely ignorant." He said he had the "misfortune" to have been one of the potato Commissioners appointed by Government, "and after all his experience in that capacity, he freely confessed he knew less about the disease now, than when he began his experiments."

Dr. LINDLEY, in a late number of the (London) *Gardners' Chronicle*, thus enumerates the various theories and remedies which have been proposed in reference to the disease:

"Plant on hot dry land, says one; dress your land with lime, cries a second; lime and salt are better, writes a third; use plenty of potash or soda urges ano-

ther. Raise seedlings, shun guano, get sea-weed, fetch sets from Peru, plant on slopes facing the sun, plant on slopes facing the north, buy Professor HOOK-THE-SIMPLE'S 'steep,' and twenty more panaceas are offered to the poor public, which stands bewildered by the kindness of its multitude of friends. And well it may, for it possesses imperfect means of judging of probabilities in a case like this, and has no power of distinguishing between right and wrong. For ourselves, we feel it would be as presumptuous in ourselves, as in others, to hazard any recommendations, where all is confessedly most uncertain."

We believe it to be true that several kinds of vegetation, during the past summer, were affected in a similar manner with the potato. Prof. EMMONS, in the last number of the *Quarterly Journal of Agriculture*, states, that the same week in which disease first appeared on the potato, "the leaves of several elms began to dry and grow brown upon their edges, and in a few days terminated in the death of those leaves, when they fell off. Besides the elm, a few maple, horse-chestnut, plum, bass, and buttonwood trees, were affected in a manner quite similar." We noticed the same appearances at the time mentioned; and we observed, also, that the *carrot*, (especially the white carrot,) was attacked in a very similar manner, and it has, in many instances, rotted as the potato has done.

BUSINESS FOR WINTER.

.....

IN the northern section of the country, not much can be done on the farm during the winter months; but the care of stock, the procuring and preparation of fuel, will necessarily occupy much time.

If pastures and fields are covered with grass which it is deemed advisable to feed off, stock may be turned on for that purpose when the ground is not soft, but they should be kept away when there is a liability of poaching the soil. In general, cattle and horses had better be fed in the barn, or in suitable fixtures belonging to the barn-yard. The extra quantity and quality of the manure which may be saved from keeping them in this situation, will more than compensate for the trouble of feeding them. Sheep, however, while the ground is bare and *dry*, may run out, more or less, according as there should be food for them on the ground.

The poorest fodder should be reserved for the coldest weather, after the stock has become *seasoned* to dry food, and when their appetites are sharp. Last spring's calves should be fed on rowen, or second crop hay, as it is less binding in its effects on the bowels than hay from the first crop. A few potatoes, carrots, or turneps, given daily, will be found very beneficial. Cattle intended for slaughter, should be fed with strict regularity, in clean mangers; and they should have clean, dry, and comfortably warm places to lie down and sleep.

Farther south, where little or no snow falls, a system entirely different from ours, is pursued with fattening cattle. Instead of being sheltered, they are kept usually in open fields, and fed principally with Indian corn, stalk, ear, husk and all, without any other preparation than to cut and shock the corn at the proper time, and carry it to the fields from day to day. At first, it would seem that there must be great waste in this mode of feeding, and there is unquestionably more food used in making a given quantity of meat, than is required where a well regulated system is adopted. But it should be remembered that a great object in those sections, is the saving of manual labor, that being proportionately a much dearer article there, than beef, or the materials from which beef is made. Hence, on the score of economy, it may be better to waste some corn, than to expend too much labor in saving it all.

Three fields are usually appropriated to stock-feeding. The fattening cattle are fed in each of these, in regular rotation, and are followed in the course by store cattle and swine, to clean up what is first left. Where care is taken to choose dry land, with a firm, clean sod, and close attention is paid in feeding, there is less

wasted, when the hogs have cleaned up the field, than would be supposed by one unacquainted with the practice. Still, with the carelessness which too often prevails,—the cattle being fed in too small fields, or such as become muddy at times, or covered with manure—there is much waste and loss, both from the food not being eaten, and the stock being kept in uncomfortable places, where, if they thrive at all, it is but slowly.

Wood and timber should be cut and hauled if practicable, before deep snows. There is economy in this on several accounts. More fuel is saved, and more labor is done in a given time, with less expense, and far more comfort to all engaged in it. Rails for fencing may be worked out to good advantage in mild weather, and in stormy days, if there is a suitable place to work under cover, posts may be mortised and made ready for setting. Stones for walls may be readily moved, when there is just snow enough on the ground to make good sledding.

Peat for manure may be dug in many places. If designed for use next season, and without being made into compost, it will be best to spread it on the fields at once, and expose it as much as possible to the action of the air, frost, and rains, by which any acid it contains will be dissipated, and it is rendered fine and fitted for vegetable food. While bogs are frozen hard enough to bear a team, is a good time to carry off the peat which has been dug. If not wanted soon, it may be piled in large piles, in situations where it may be reached at any time.

GATE HINGES.

A good and cheap gate-hinge was lately shown to us by Dr. W. D. Cook, of Sodus, N. Y. It is represented in the annexed figure, the lower hinge being merely a short rod or bar of iron. A, fig. 110, bent at a right angle, so that one end passes into the gate post B, and the other into the foot of the gate through a circular iron ring or washer. The upper hinge is made by attaching a short piece of cap-timber, to the upper end of the post, by a mortise, as shown by the dotted lines, projecting towards the gate, and with a two inch auger hole to receive the rounded end of the upright bar C.

This contrivance is not only recommended by its cheapness, but by the ease with which a single hand may place the gate on its hinges, the difficulty of adjusting two entering points at the same moment being removed.

Good hinges are also made of cast iron, at less than half the usual expense, and not inferior to those of wrought iron, as shown by Fig. 111. The hook A, on which the hinge turns, should be of good wrought iron, the bar B, forming the rest of the piece, being cast round it. The bar C, through one end of which the hook or iron pin A passes, is entirely of cast iron. Both of them are notched on the lower sides, so that after placing them in the holes made in the gate and posts for their reception, they are firmly secured by driving a wooden wedge or pin into the holes above them.

Fig. 110.

Fig. 111.

MR HORSFORD'S LETTERS.—NO. XV.

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Giessen, Oct 10, 1846.

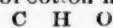
MR. TUCKER—You have doubtless seen, in the reported proceedings of the British Association, that Prof. Schonbein, of Basle, Switzerland, had discovered or invented and exhibited, at the recent meeting of scientific men in Southampton, an *explosive cotton*, that in many respects promises to supplant the best varieties of gunpowder.

It exploded, entirely disappearing without smoke or smell, at a temperature of 400 degrees C., while the best rifle powder required a heat of some 600 degrees C. The cotton preparation exploded even with a stroke of the hammer, and underneath piles of ordinary gunpowder, without firing them—as is the case with fulminating silver and quicksilver. Soon after the announcement of Schonbein, here, in Germany, Prof. Boetger, of Frankfort, made the same discovery, and united with the Basle Professor in an arrangement to share the profits of rewards from Government, whatever they might be. The newspapers abounded with records of experiments made under the direction of artillery officers, and crowds came about the laboratory of Prof. Boetger to see the new cotton, and witness its effects in throwing balls, which so far surpassed those of ordinary powder.

Naturally enough, a great number of chemists commenced experiments in the hope of finding out the secret. Among others, several of the young chemists in the Giessen Laboratory, and I among them. We have had the pleasure here to make a cotton that exploded at a low temperature, but by no means equalling in power that which had gained such renown.

Yesterday, appeared in the newspapers a communication from Prof. Otto, of Brunswick, containing his discovery, of which the following is the substance.

He had gone forward in his experiments from the suggestion of Pelouze, made several years since, that paper, which is chiefly composed of cotton, might be made explosive, by saturating with nitric acid. The chemical constitution of cotton may be written thus:



Five atoms of this with two of nitric acid, give the elements for five atoms of carbonic acid, five of water, (vapor,) and two of nitrogen, products that have no smoke and no smell.*

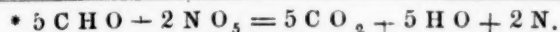
Pelouze failed to realize, practically, the idea above expressed. Paper is cotton with too small surface. Otto found, by dipping cotton for an instant in concentrated nitric acid, and then drying it, that he had, as he considers, the wonderful product. Here the cotton is nearly all surface. By too long digestion in nitric acid, new products are formed, xyloidin, probably, among others. By treatment in diluted nitric acid, water enters the delicate cotton fibres, and prevents that actual contact, if not combination of the nitric acid, essential to the explosive character.

The nitric acid was prepared by distilling from 1 part of saltpetre in 6 parts of concentrated sulphuric acid.

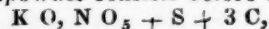
Prof. Otto claims a share in any rewards that may be made for the discovery.

There is unquestionably much improvement to be made in the article, before the full value of the invention can be ascertained. For mining, quarrying, and some kinds of military service, it promises to be of great use. For ordinary fire-arms, and probably for cannon, I cannot help doubting its profitable employment. The experience of France under Napoleon, has shown that a powder from charcoal, sulphur, and saltpetre, may be made so strong that it cannot be profitably used.

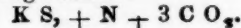
I understand that the Messrs. Schonbein and Boetger have proposed to our Government to purchase their se-



Common gunpowder consists before explosion, of



which in exploding becomes



cret of manufacturing this new material for military service. If it be so, the publication of Prof. Otto's communication should be extended to America as well as to Europe.

I send you herewith a specimen of the explosive cotton as prepared to-day by Prof. Liebig—not, however, according to Otto's method. What his method may be, I am unable to say. By drying it a minute on a stove, and then firing, you will witness its chief characteristics. E. N. HORSFORD.

[The cotton sent by Mr. HORSFORD has been tried here, and it evidently possesses considerable explosive power. Prof. AGASSIZ, who was present when some of it was fired, stated that it differed considerably from the "gum cotton" of SCHONBEIN—the latter being produced from gum, and that sent by Mr. H. being (apparently) common cotton with the preparation described. Prof. A. thinks there is no doubt that SCHONBEIN's invention will, to a great extent, displace gunpowder.]

INQUIRIES.

CRANBERRIES.—B. W., (Pemberton, N. J.) We refer you to our last number, pages 336, 354.

SOILING.—DELAWARE FARMER.—You will find the information you seem to require, by reference to the *Cultivator* for 1845, page 22, and to our last number, pages 331, 332.

CLUSTER PEA.—J. A. B., (Cazenovia.) We know nothing of this pea, excepting from the communication of Mr. SPINNER, in our number for April last. If any person has any further knowledge of it, we should be glad to hear from them. If it has been *proved* valuable, we should like to know where seed can be had, and at what price.

JERUSALEM ARTICHOKE.—J. A. B. We see no reason why this vegetable is not adapted to general cultivation. Any one who has a few bushels of the seed to spare, will please inform us.

REFUSE POMACE.—J. A. B. We have seen this article often used as manure, but in no instance with much benefit. The acid is retained a great while, and it is very hurtful to vegetation. In its raw state it will kill thistles, briars, &c., and we have known it used for that purpose. We have seen some attempts to work it with lime and ashes, but the conclusion was that "it cost more than it come to."

MACHINE FOR CUTTING GRASS.—P. S. A., (New Wilmington, Del.) The only machines of which we have heard, that are used for cutting grass, are such as are used for cutting grain—commonly called harvesting machines. Mr. HUSSEY's and Mr. McCORMICK's we had supposed were as good as any for this purpose; but there may be others which answer better.

FOREIGN.

The news by the *Acadia*, which arrived at Boston on the 16th ult., has had a tendency to lower the prices of breadstuffs, particularly flour, in this country. The demand in England and Ireland is likely to be less than had been previously anticipated. There is no doubt that there is considerable scarcity, and in some districts much suffering among the inhabitants; but grain has been hurried into all the British ports in large quantities, which will probably go far towards affording a supply. The following paragraph from the *Bankers' Circular*, may be worthy of note as an indication of the state of the foreign market:

"Our belief is that, so far from wanting an import of four millions of quarters, if there were not one bushel imported in addition to what has been now purchased for England, plenty of food will be found in the British islands to feed the people, at the present rate of consumption, until September, 1847."

At the latest dates, the demand for Indian corn continued, though flour had declined; and a small decline is said to have taken place in American beef, pork, and cheese.



ALBANY, DECEMBER, 1846

CIRCULATION OF "THE CULTIVATOR."

In order to show such of our friends as are disposed to aid in the circulation of our paper, what has been done in some places, and what undoubtedly may be done in many others, we publish a list of those post-offices to which we now send *fifteen* or more copies. We should, of course, be highly gratified to have this list greatly extended for our next volume.

<i>Maine.</i>	Watertown,.....	21	Jordan,.....	10	
Bangor,.....	15	West Hartford,...	2	Keeseville,.....	19
<i>New Hampshire.</i>	Waterbury,.....	16	Kinderhook,.....	19	
Walpole,.....	22	<i>New-York.</i>	Kirkland,.....	15	
Westmoreland,...	15	Albany,.....	174	Lysander,.....	15
<i>Vermont.</i>	Amsterdam,.....	23	Little Falls,.....	18	
Arlington,.....	17	Amenia,.....	15	Lockport,.....	24
Bethel,.....	22	Auburn,.....	204	Lowville,.....	23
Burlington,.....	60	Argyle,.....	19	Livonia,.....	20
Bellows Falls,...	20	Accord,.....	15	Lansingburgh,...	15
Bemington,.....	15	Aurora,.....	17	Marcellus,.....	15
Brandon,.....	26	Baldwinsville,...	26	Mexico,.....	16
Burlington Falls,...	15	Bellisle,.....	15	Moriah Four Cor.,	19
Bridport,.....	17	Batavia,.....	27	Meredith,.....	15
Brattleboro,.....	15	Buel,.....	15	Middle Granville,...	15
Chimney Point,...	15	Buffalo,.....	54	Morrisville,.....	15
Castleton,.....	16	Barcelona,.....	31	Madison,.....	23
Charlotte,.....	29	Beekmantown,...	16	Manhasset,.....	15
Cornwall,.....	15	Binghamton,....	24	Maltaville,.....	15
Derby,.....	40	Burnt Hills,.....	22	Mamaroneck,....	16
East Poultney,...	32	Ballston,.....	15	Malta,.....	15
Fayetteville,...	25	Bath,.....	18	Malone,.....	20
Grand Isle,.....	25	Butternuts,.....	41	Moirra,.....	15
Hinesburgh,.....	18	Belleville,.....	15	Manlius,.....	34
Middlebury,.....	34	Bristol,.....	23	New Hartford,....	17
Manchester,.....	20	Cooperstown,....	46	Nelson,.....	15
New Haven,.....	18	Canterbury,.....	16	New Lisbon,.....	16
North Ferrisburgh,	15	Chittenango,....	22	New Rochelle,....	18
Orwell,.....	15	Cazenovia,.....	25	New Berlin,.....	15
Pawlet,.....	26	Canandaigua,....	53	Northeast,.....	15
Pittsford,.....	16	Corning,.....	15	Newark,.....	25
Rutland,.....	138	Charlton,.....	19	North Granville,...	15
Stow,.....	15	Cedarville,.....	21	New-York City,...	873
Salisbury,.....	16	Coxsackie,.....	15	Newburgh,.....	29
St. Albans,.....	18	Catskill,.....	15	New Lebanon,....	29
Shoreham,.....	28	Clinton,.....	18	Nunda Valley,....	46
Shelburne,.....	25	Conesville,.....	19	Oswego,.....	47
Underhill,.....	15	Clyde,.....	19	Ogdensburgh,....	17
<i>Vergennes.</i>	23	Cobleskill,.....	26	Owego,.....	30
Warren,.....	15	Camillus,.....	15	Oxford,.....	24
Whiting,.....	19	Catharine,.....	17	Otisville,.....	18
Winooski Falls,...	17	Centre Almond,...	15	Pulaski,.....	43
Windsor,.....	16	Champlain,.....	37	Perryville,.....	19
Westford,.....	24	Durham,.....	15	Penn Yan,.....	26
Waitsfield,.....	18	De Ruyter,.....	16	Palmyra,.....	29
Williston,.....	32	East Hamilton,...	15	Peru,.....	24
<i>Massachusetts.</i>	18	East Greenwich,...	15	Poughkeepsie,...	50
Boston,.....	201	Easton,.....	28	Perry,.....	21
Deerfield,.....	18	Eaton,.....	49	Peterboro,.....	15
Easthampton,...	15	East Bloomfield,...	27	Plattsburgh,....	22
Fall River,.....	35	Ellicottville,....	15	Rushville,.....	18
Middlefield,.....	17	Elmira,.....	32	Rome,.....	17
Newburyport,...	21	East Stockholm,...	15	Rochester,.....	123
Northampton,...	28	Eagle Mills,.....	15	Rhinebeck,.....	16
Richmond,.....	15	Fairmount,.....	17	Richmond,.....	23
Springfield,....	94	Fort Plain,.....	15	South Middletown,	41
Worcester,.....	16	Fulton,.....	29	Stanfordville,....	15
Wilbraham,.....	23	Flushing,.....	15	Schoharie C. H.,...	15
<i>Rhode Island.</i>	73	Fishkill,.....	15	Saratoga,.....	15
Providence,.....	73	Fishkill Landing,	17	Schenectady,....	33
<i>Connecticut.</i>	16	Forestville,.....	15	Syracuse,.....	137
Avon,.....	16	Fredonia,.....	15	Salem,.....	18
Bristol,.....	21	Galway,.....	16	Sandy Hill,.....	15
Berlin,.....	15	Geneva,.....	62	South Hartford,...	15
Bridgeport,.....	19	Greenbush,.....	21	Troy,.....	53
Cheshire,.....	23	Greenville,.....	20	Tarrytown,.....	18
Chapinville,....	15	Geneseo,.....	15	Truxton,.....	15
Columbia,.....	15	Henderson,.....	17	Utica,.....	31
Darien,.....	15	Havanna,.....	15	Vernon,.....	16
Danbury,.....	15	Hillsdale,.....	23	Verona,.....	18
Farmington,....	33	Hudson,.....	43	Vernon Centre,...	24
Litchfield,.....	15	Hamilton,.....	30	West Winfield,...	15
New Milford,....	27	Hartford,.....	26	Whitesboro,.....	32
New Canaan,....	18	Hempstead,.....	17	Westmoreland,...	21
New Britain,....	15	Homerville,.....	17	Watertown,.....	49
Portland,.....	15	Hanover,.....	15	Whitehall,.....	15
Sharon,.....	15	Ithaca,.....	29	Waterford,.....	25
Suffield,.....	22	Johnstown,.....	22	Westchester,....	16
Windsor,.....	17	Jonesville,.....	16	Waterloo,.....	28

West Greenfield,	16	Charlottesville,	15	Newark,	25
Wilton,	15	Culpepper C. H.,	20	Oberlin,	15
Waterville,	20	Fairfax C. H.,	21	Sandusky,	18
Youngstown,	22	Lynchburgh,	2	Warren,	21
<i>New Jersey.</i>		Richmond,	15	Zanesville,	15
Burlington,	15	Wheeling,	15	<i>Indiana.</i>	
Carpenter's Land'g.	15	<i>North Carolina.</i>		Mishawaka,	16
Greenwich,	16	Greensboro,	17	Madison,	28
New Brunswick,	15	Lexington,	15	South Bend,	17
Perth Amboy,	15	Newbern,	26	Salem,	15
Rahway,	17	Raleigh,	21	Terre Haute,	15
Salem,	32	<i>South Carolina.</i>		<i>Illinois.</i>	
<i>Pennsylvania.</i>		Bennittsville,	15	Chicago,	15
Carlisle,	54	Beaufort,	17	Hennepin,	15
Erie,	25	Greenville C. H.,	19	<i>Michigan.</i>	
Greensburg,	27	<i>Georgia.</i>		Ann Arbor,	41
Herriotsville,	15	Columbus,	15	Adrian,	15
Hopewell Cotton Works,	15	Macon,	31	Battle Creek,	18
Harbor Creek,	15	Madison,	15	Grand Rapids,	16
Jeffersonville,	30	Savannah,	15	Ionia,	15
Lancaster,	50	<i>Alabama.</i>		Kalamazoo,	15
Lewisburg,	17	Mobile,	30	Palmyra,	15
Montrose,	15	Tuscaloosa,	34	Romeo,	15
Newville,	24	<i>Mississippi.</i>		Shiawassee,	16
Northeast,	17	Columbus,	18	Ypsilanti,	53
Pittsburgh,	93	<i>Missouri.</i>		<i>Wisconsin.</i>	
Philadelphia,	149	St. Louis,	16	Milwaukee,	45
Uniontown,	15	<i>Tennessee.</i>		<i>Canada.</i>	
Waynesburg,	22	Franklin,	40	Brockville,	56
Wayne,	15	Maryville,	15	Gananoque,	19
York,	15	<i>Kentucky.</i>		Montreal,	34
<i>Delaware.</i>		Frankfort,	15	Quebec,	38
Wilmington,	43	Louisville,	31	Simcoe,	26
<i>Maryland.</i>		Lexington,	38	<i>Nova Scotia.</i>	
Baltimore,	43	Millersburg,	15	Cornwallis,	15
Cambridge,	14	Paris,	68	Kentville,	15
Easton,	33	Versailles,	15	Wolfville,	15
Frederick,	23	<i>Ohio.</i>		<i>New Brunswick.</i>	
Trappe,	23	Aurora,	25	St. John,	18
Washington, D. C.	29	Brookfield,	15	Woodstock,	15
Alexandria,	17	Columbus,	20	<i>Arkansas.</i>	
<i>Virginia.</i>		Cincinnati,	15	Cherokee Nation,	41
Anandale,	15	Elyria,	15	Choctaw Nation,	19
Bridgewater,	18	Granville,	16	<i>West Indies.</i>	
		Gustavus,	21	Bermuda,	15

TO CORRESPONDENTS.

COMMUNICATIONS have been received, since our last, from Henry M. Earle, Samuel Wait, Jr., J. G. Clark, Jr., B. W., Wm. Bacon, Prof. J. P. Norton, Glenallen, Thaddeus W. Harris, S. P. Rollo, Prof. E. N. Horsford, Mrs. B. R. Voorhees, Joseph A. Badger, A. Fitch, Peter S. Alrich, Samuel Leech.

BOOKS, PAMPHLETS, &c., have been received as follows:

Norman's Southern Agricultural Almanac for 1847; edited by Thomas Affleck, Esq. Published by M. B. Norman, New-Orleans.

Catalogue of Fruit and Ornamental Trees and Plants, cultivated at the Lake Erie Nurseries, Cleveland, Ohio. Elliott & Co., proprietors.—Also, of Arch Spring Nursery, Washington county, Md., by D. & J. Reichard.—Also, of Kinderhook Nursery, Columbia county, by Henry Snyder.—Also, of the Ashton Nurseries of Thomas Hancock, near Burlington, N. J.

The Sentinel and Witness newspaper, containing the Reports of the Middlesex (Conn.) Ag. Society.

Gen. Chandler's Address, delivered at the close of the late Fair of the American Institute.

Prince's Catalogue of Bulbous and Tuberous Rooted Flowers—also, his Supplementary Catalogue of New and Rare Fruits.

Dealings with the firm of Dombey & Son, Wholesale and Retail and for Exportation; by Charles Dickens, (Boz.) With illustrations by H. K. Browne. No. I. To be completed in 20 Nos. at 8 cents each. Published by Lea & Blanchard, Philadelphia.

GOOD CROP OF POTATOES.—HENRY BUTMAN, of Dixmont, Maine, states in the Boston Cultivator, that he raised 1000 bushels of potatoes on 1½ acres of ground. The variety was the Long-reds, or "Merinos." They grew on a deep soil, on which had been burned, the year previous, a large quantity of rubbish, logs, bushes, &c., and the ashes plowed in. The next season the potatoes were planted, after another plowing, without any dressing.

MONTHLY NOTICES.

CULTIVATOR OFFICE.—The publisher of The Cultivator, having become the proprietor of the "Albany Agricultural Warehouse and Seed Store," has taken the large store, No. 10 Green-st., in the most central part of the city, to which he has removed the offices of the Cultivator and the Horticulturist, together with his Ag. Warehouse and Seed Store, and where he will at all times be pleased to receive calls from any of his subscribers who may visit the city.

JOHN P. NORTON, Esq., of Farmington, Ct., left here on the 16th of September last for Europe. His intention, we understand, is to pass a year, or more, at various scientific institutions; and on his return to this country, it is expected he will assume the duties belonging to the newly-established professorship of chemistry, &c., at Yale College. Mr. N. took Scotland on his way to the continent, and from Edinburgh we have an interesting letter from him, which we shall give in our January number. He will also favor us, as heretofore, with frequent communications, which, as our readers will be glad to learn, will appear from time to time in our columns.

PROF. AGASSIS, of Neuf-Chatel. This gentleman, of whom it may safely be said that he stands at the head of living naturalists, has arrived in this country since our last number went to press. He intends spending at least two years in the United States, to study our natural history in every department, both fossil and recent. Having already made a rapid tour of our principal cities, and visited naturalists of these places, he has returned to Boston, preparatory to his course of lectures at the Lowell Institute. In his visit to our city and the State Geological Rooms, he highly complimented the liberality of our legislators in commencing and continuing the scientific researches which have resulted in so splendid a collection, and the publication of a work which, he says, is sought eagerly for in every part of Europe, and which has induced so many distinguished foreign naturalists to visit us, and will bring many more. The visits of such men do more to render our country and its resources appreciated abroad, than hundreds of those travellers who come here to kill time and to gossip, and we shall soon see and feel the results, in the softening of those prejudices which have been engendered and kept up abroad against America and Americans. For Prof. Agassis, a pupil of the great Cuvier, a name revered among naturalists, we bespeak the most cordial reception among our friends, and which we know will be as freely accorded to the man as to the philosopher.

YIELD OF WHEAT IN ENGLAND.—The average yield of wheat in Britain, is put down in statistical works at 26 bushels per acre, the yield having increased, within a few years, 8 bushels per acre. Mr. COLMAN states that in his intercourse with the British farmers, he has seldom found the yield, under good cultivation, less than 32 bushels, and that he has frequently found it full 40 bushels. He states, further, that he is informed, on the best authority, on the redeemed lands ("fens,") of Lincolnshire, the yield is very often from 56 to 64 bushels per acre. One farmer in Berkshire assured Mr. C. that his crop on a large farm averaged 56 bushels to the acre; and he adds that it has been well attested that a crop in Norfolk, the same year, produced 90 bushels and three pecks per acre—"the largest yield," says Mr. C., "within my knowledge."

SEED-CORN.—We have received from Mr. ELI ROOT, of Orwell, Vt., a bushel of Indian corn of a variety cultivated by him, and in reference to which he says—"I send you a box of seed-corn of a kind my father brought from Pittsfield, Mass., fifty-six years ago last March, and which has ever since been planted on my farm. You see it is not quite run out yet, though it has not been improved by crossing." The corn is certainly a handsome sample—the ears long, (8 rowed,) well filled over the cob, and the kernels large, plump, and bright. We see but one objection to it, and due

attention in selecting seed would in a few years greatly remedy that. The *butts* of the ears are too large—holding so much sap or moisture, as to prevent the ear and grain from readily drying. It is of much importance that the crop should be in condition to be stored at the earliest possible period; as a difference of a few days in this respect may greatly affect the value of the crop. The smaller the cob and butt, the quicker the corn will become dry and fit to put in the crib.

BROWSE FOR CATTLE.—MR. CLARK RICH, of Shoreham, Vt., informs us that cattle and sheep can be kept well on browse alone. We have no doubt of the fact, as we have known instances where it has been done. Mr. R. states that last spring, (1846,) the farmers in portions of Pennsylvania and Ohio, near lake Erie, were compelled to take their stock to the woods daily, in order to support them through the winter. It was extremely dry there the previous season, so that the hay crop almost entirely failed, making it necessary to depend on browse for fodder. Yet Mr. R. says he heard many say their cattle never came out better in the spring.

CORRECTION.—By some unaccountable mistake, in the list of pears on p. 336, last No., the name *Julienne* was printed "Indiana."

"C. P. WHEELER."—We shall be glad if any of our subscribers can inform us of the whereabouts of this man, who formerly acted as agent for "The Cultivator," at Lexington, Mass., and forgot to pay for the papers he ordered.

THE STRAWBERRY CONTROVERSY.

[Although the question in regard to the sexual character of the strawberry has been considerably discussed, we think the following very able article, written by the Rev. H. W. BEECHER, for the *Western Farmer and Gardener*, will be read with interest, and will be regarded as placing the subject for the future beyond controversy.]

No man will deny, that in their cultivated state, strawberries are found, in respect to their blossoms, in three conditions: first, blossoms with stamens alone, the pistillate organs being mere rudiments; second, blossoms with pistillate organs developed fully, but the stamens very imperfect and inefficient; third, blossoms in which staminate and pistillate organs are both about equally developed.

There are two questions arising on this state of facts, one, a question of mere vegetable physiology, viz; is such a state of organization peculiar to this plant originally, or is it induced by cultivation? The other question is one of eminent practical importance, viz: what effect has this state or organization upon the success of cultivation?

Passing by the first question, for the present, we would say of the second that, a *substantial* agreement has, at length, been obtained. It is on all hands conceded that staminate plants, or those possessing only stamens, and not pistillate organs, are unfruitful. Any other opinion would now be regarded as an absurdity. It is equally well understood that pistillate plants, or those in which the female organs are fully, and the male organs scarcely at all developed, are unfruitful. No one would attempt to breed a herd of cattle from males *exclusively*, or from *females*; and, for precisely the same reason, strawberries cannot be had from plants substantially male, or substantially female, where each are kept to themselves.

But a difference yet exists among cultivators as to the facts respecting those blossoms which contain *both* male and female organs, or, as they are called, *perfect* flowering plants.

Mr. Longworth states, if we understand him, substantially, that perfect flowering varieties will bear but moderate crops, and, usually, of small fruit.

On the other hand, Dr. Brinkley, whose seedling strawberries we noticed in our last number, Mr. Down-

ing, and several other eminent cultivators, adopt the contrary opinion, that, *with care*, large crops of large fruit may be obtained from perfectly flowering plants. The question is yet, then, to be settled.

It is ardently to be hoped that, hereafter, we shall have less premature and positive assertion, upon unripe observations, than has characterized the early stages of this controversy. We will take the liberty of following Mr. Hovey in his Magazine, between the years 1842 and 1846, not for any pleasure that we have in the singular vicissitudes of opinion chronicled there, but because an eminent cultivator, writer, and editor of, hitherto, the only horticultural magazine in our country, has such influence and authority in forming the morals and customs of the kingdom of horticulture, that every free subject of this beautiful realm is interested to have its chief men of such accuracy that it will not be dangerous to take their statements.

In 1842, Mr. Longworth communicated an article on the fertile and sterile characters of several varieties of strawberries for Mr. Hovey's Magazine, which Mr. H., for subject matter, endorsed. In the November number, Mr. Coit substantially advocated the sentiments of Mr. L., and the editor, remarking upon Mr. Coit's article, recognized distinctly the existence of male and female plants.

He (Mr. H.) says that of four kinds mentioned by Mr. C. as unfruitful, two were so "*from the want of staminate or male plants*;" and "*the cause of the barrenness is thus easily explained*." And he goes on to explain divers cases upon this hypothesis; and still more resolutely he says, that all wild strawberries have not perfect flowers; "*in a dozen or two plants which we examined last spring, some were perfect, (the italics are ours,) having both stamens and pistils; others, only pistils, and others, only stamens*;" thus showing that the defect mentioned by Mr. Longworth exists in the *original species*." He closes by urging cultivators to set rows of Early Virginia among the beds for the sake of impregnating the rest.

Mr. Hovey's next formal notice was exactly one year from the foregoing, November, 1843, and it appears thus: "We believe it is now the generally received opinion of *all intelligent cultivators* (italics are ours again,) that there is *no necessity of making any distinction in regard to the sexual character of the plants when forming new beds. The idea of male and female plants, first originated, we believe, by Mr. Longworth, of Ohio, is now considered as exploded*." Such a sudden change as this was brought about, he says, by additional information received during that year by means of his correspondents, and by more experience on his own part. He says nothing of male blossoms and female blossoms, *which he had himself seen in wild strawberries*. Mr. Hovey then assumed the theory that *cultivation*, good or bad, is the cause of fertile or unfertile beds of strawberries, and he says: "*in conclusion, we think we may safely aver, that there is not the least necessity of cultivating any one strawberry near another (our italics) to ensure the fertility of the plants, provided they are under a proper state of cultivation*."

Mr. Hovey now instituted experiments, which he promised to publish, by which to bring the matter to the only true test; and he, from time to time, repromised to give the result to the public, which, thus far, we believe, he has forgotten to do.

His magazine for 1844 opens as that of 1843 closed; and in the first number he says: "the oftener our attention is called to this subject, the more we feel confirmed in the opinion that the theory of Mr. Longworth is entirely unfounded; that there is *no such thing as male and female plants*, though certain causes may produce, as we know they have, fertile and sterile ones."

Nevertheless, in the next issue but one, this peremptory language is again softened down, and a doubt even appears, when he says, "*If Mr. Longworth's theory should prove true, &c.*" We, among others, waited anxiously for the promised experiments; but, if published, we never saw them. The subject rather died out of his Magazine until August, 1845, when, in speak-

ing of the Boston Pine, a second fine seedling of his own raising, he is seen bearing away on the other tack, if not with *all* sails set, yet with enough to give the ship headway in the right direction: "Let the causes be what they may, it is sufficient for all practical purposes to know, that *the most abundant crops* (italics ours) can be produced by planting some sort abounding in *staminate* flowers, in the near vicinity of those which do not possess them;" p. 293. And on p. 444 he reiterates the advice to plant near the staminate varieties. In the August number for 1846, p. 309, Mr. Hovey shows himself a thorough convert to Mr. Longworth's views, by endorsing, in the main, the report of the committee of the Cincinnati Horticultural Society. We hope after so various a voyage touching at so many points, that he will now abide steadfast in the truth.

We look upon this as a very grave matter; not because the strawberry question is of such paramount, although it is of no inconsiderable importance; but it is of importance whether accredited scientific magazines should be trustworthy; whether writers or popular editors should be responsible for mistakes entirely unnecessary. We blame no man for vacillation while yet in the process of investigation, nor for coming at the truth gradually, since this is the necessity of our condition to learn only by degrees, and by painful shiftings. The first requisite for a writer is, that he be worthy of trust in his statements. No man can be trusted who ventures opinions upon uninvestigated matters; who states facts with assurance which he has not really ascertained, who evinces rashness, haste, carelessness, credulity, or fickleness in his judgments. The question of perfect or imperfect blossoms depends upon the simplest exercise of eye-sight. It requires no measurements, no process of the laboratory, no minute dissections or nice calculations, it requires only that a man should see what he looks at.

When a boy, playing "how many fingers do I hold up," by dint of peeping from under the bandage, we managed to make very clever guesses of how many lily fingers some roguish lassie was holding in tempting show before our bandaged eyes, but some folks are not half so lucky with both eyes wide open, and the stamens and pistils standing before them.

If such latitude is permitted to those who conduct the investigations peculiar to horticulture, who can confide in the publication of facts, observations, or experiments? Of what use will be journals and magazines? They become like chronometers that will not keep time; like a compass that has lost its magnetic sensibility; like a guide who has lost his own way, and leads his followers through brake, and morass, and thicket, into interminable wanderings. Sometimes, the consciousness of faults in ourselves, which should make us lenient towards others, only serves to produce irritable fault-finding. After a comparison of opinions and facts, through a space of five years, with the most distinguished cultivators, east and west, Mr. Longworth is now universally admitted to have sustained himself in all the essential points which he first promulgated—not *discovered*, for he made no claim of that sort. The gardeners and the magazines of the east have, at length, adopted his practical views, after having stoutly, many of them, contested them.

It was, therefore, with unfeigned surprise, that we read Mr. Hovey's latest remarks in the September number of his magazine, in which, with some asperity, he roundly charges Mr. Longworth with manifold errors, and treats him with a contempt which would lead one ignorant of the controversy, to suppose that Mr. Hovey had never made a mistake, and that Mr. Longworth had been particularly fertile of them. Thus: "Mr. Longworth's remarks abound in so many errors and inconsistencies, that we shall scarcely expect to notice all. 'Another gross assertion,' &c. Referring to another topic, he says: 'This question, we therefore, consider as satisfactorily settled, without discussing Mr. Longworth's conflicting views about male and female Keen.'"

This somewhat tragical comedy, is now nearly played out, and we have spoken a word just before the fall of

the curtain, because, as chroniclers of events, and critics of horticultural literature and learning, it seemed no less than our duty. We have highly appreciated Mr. Hovey's various exertions for the promotion of the art and science of horticulture, nor will his manifest errors and short comings in this particular instance, disincline us to receive from his pen whatever is good.

We hope that our remarks will not be construed as a defence of western men or western theories, but as a defence of the truth, and of one who has truly expounded it, though in this case, the theory and its defence happen to be of western origin. Whatever errors have crept into Mr. Longworth's remarks should be faithfully expurgated; and perhaps it may be Mr. Hovey's duty to perform the lustration. If so, courtesy would seem to require that it should be done with some consciousness that through this whole controversy, Mr. Longworth is now admitted to have been right in all essential matters; and if in error at all, only in minor particulars; while Mr. Hovey, in all the controversy in respect to the plainest facts, has been changing from wrong to right, from right to wrong, and from wrong back to right again. We do not think that the admirable benefits which Mr. Longworth has conferred upon the whole community, by urging the improved method of cultivating the strawberry, has been adequately appreciated. We still less like to see gratitude expressed in the shape of snarling gibes and petty cavils.

We will close these remarks by the correction of a matter which Mr. Downing states. While he assents to all the *practical* aspects of Mr. Longworth's views, he dissents to some matters of fact and philosophy, and among others to the fact that Hovey's seedling is *always* and *only* a pistillate plant. He thinks that originally it had *perfect* flowers, but that after bearing twice or thrice on the same roots, the plants degenerate and become either pistillate or staminate. He says: "Hovey's seedling strawberry, at first, was a perfect sort in its flower, but at this moment, more than half the plants in this country have become pistillate."

Mr. Hovey himself states the contrary on p. 112 of his Magazine for 1844. He denies that there are two kinds of blossoms to his seedling, and says, "the flowers are all of one kind, with both pistils and stamens, *but the latter quite short and hidden under the receptacle.*" This is the common form of all the *pistillate* blossoms, and shows in so far as Mr. Hovey's observations are to be trusted, that at its starting point and home, Hovey's Seedling was, as with us it now invariably is, so far as we have ever seen it, a pistillate plant.

PRICES OF AGRICULTURAL PRODUCTS.

New-York, Nov. 20, 1846.	
COTTON—New Orleans and Alabama per lb., 8½a11½c.—Florida, 8½a10—Upland, 6½a10½ cts.	
BUTTER—Orange County, per lb., 16a18c.—Western dairy, 13a15c.	
CHEESE—Per lb., 7a8c.	
FLOUR—Genesee, per bbl., \$5.50—Ohio and Michigan, \$5.37½ a\$5.40. [The late foreign news has depressed prices full 50 cts. per bbl.]	
GRAIN—Wheat, per bushel, \$1.05a\$1.07 for Red.—\$1.16a \$1.17 for Gen. see. Corn, 73a73½ cts. Rye, 76a78 c.—Oats, 36a 37c.	
HEMP—Russia, clean, per ton, \$210—Manilla, \$150.	
HAMS—Smoked, per lb., 6½a9 cts.	
BEEF—Mess. per bbl., \$7a\$8.25.	
LARD—Per lb., 7½a8c.	
PORK—Mess. per bbl., \$9.87—Prime, \$8a\$8.12½.	
HOPS—Per lb., 9a10c.	
TOBACCO—Connecticut, per lb., 10a11c—Kentucky, 4c.	
WOOL—(Boston prices.) Nov. 18:	
Prime or Saxon fleeces, washed per lb.	33a40 cts.
American full blood fleeces,	32a33 "
" three-fourths blood fleeces,	25a28 "
" half blood do	23a25 "
" one-fourth blood and common,	20a22 "

GUANO.—200 tons, the balance of the ship Shakspeare's cargo from Ichaboe, in tight casks, for sale in lots to suit purchasers, by E. K. COLLINS & Co., 56 South-st.

The many experiments made this season from this cargo, not only prove the great gain in using it, but that it is at least equal if not superior to any other guano.

Sept. 1, 1846.—U

DOWNING'S WORKS.

VALUABLE WORKS, by A. J. Downing, Esq. *The Fruits and Fruit Trees of America*, or the Culture, Propagation, and management of the Gardens and Orchards of Fruit Trees generally; with descriptions of all the finest varieties of fruit cultivated in the country.

1 thick vol. 12 mo., with many engravings. \$1.50. Or a superior edition in large 8 vo., to match the author's other works. \$2.50.

"This is the most valuable of all the books which Mr. Downing has contributed to the higher departments of our rural literature, and it is the most charming book of the season. Some idea may be formed of its completeness from the fact of its containing a list of no less than 490 sorts of apples. Mr. Downing claims the right to talk about fruits and trees from having been born in 'one of the largest gardens, and upon the banks of one of the noblest rivers in America;' everybody will concede the right since he has shown himself so competent to the task."—*Broadway Journal*.

"This is a valuable practical work, and every orchardist and every fruit-grower should possess himself of its stores of information."—*U. S. Gazette*.

A Treatise on Landscape Gardening; adapted to North America, with a view to the improvement of country residences. Comprising historical notices, and general principles of the art; directions for laying out grounds, and arranging plantations; descriptions and cultivation of hardy trees; decorative accompaniments to the house and grounds; formation of pieces of artificial water, flower gardens, &c.; with remarks on Rural Architecture. New edition, with large additions and improvements, and many new and beautiful illustrations. 1 large vol. 8vo. \$3.50.

"This volume, the first American treatise on this subject, will at once take the rank of the standard work."—*Silliman's Jour.*

"Downing's Landscape Gardening is a masterly work of its kind,—more especially considering that the art is yet in its infancy in America."—*Loudon's Gardener's Magazine*.

Designs for Cottage Residences; adapted to North America, including Elevations and Plans of the Buildings, and designs for laying out Grounds. 1 vol. 8vo., with very neat illustrations. Second edition, revised. \$2.00.

A second edition of the "Cottage Residences" is just published, as Part I.; and it is announced by the author that Part II., which is in preparation, will contain hints and designs for the interiors and furniture of cottages, as well as additional designs for farm buildings.

Gardening for Ladies; and Companion to the Flower Garden. Being an alphabetical arrangement of all the ornamental plants usually grown in gardens and shrubberies; with full directions for their culture. By Mrs. Loudon. First American, from the second London edition. Revised and edited by A. J. Downing. 1 thick vol. 12 mo., with engravings representing the processes of grafting, budding, layering, &c., &c. \$1.25.

"A truly charming work; written with simplicity and clearness. It is decidedly the best work on the subject, and we strongly recommend it to all our fair countrywomen, as a work they ought not to be without."—*N. Y. Courier*.

"This is a full and complete manual of instruction upon the subject of which it treats. Being intended for those who have little or no previous knowledge of gardening, it presents in a precise and detailed manner, all that is necessary to be known upon it, and cannot fail to awaken a more general taste for these healthful and pleasant pursuits among the ladies of our country."—*N. Y. Tribune*.

Published and for sale by **WILEY & PUTNAM**,
Oct. 18.—3t No. 161 Broadway, N. Y.
Messrs. W. & P. will publish shortly, *Wightwick's Hints to Young Architects*. Edited with additions, by A. J. Downing.
Also, a new edition of *Lindley's Horticulture*, edited by A. J. Downing, and Prof. A. Gray.

HOVEY'S PATENT SPIRAL STRAW-CUTTER.

THESE machines are thought to excel all others for cutting hay, straw, or corn-stalks. The knives being supported by wings cast on the cylinder, are rendered sufficiently strong to cut the largest corn-stalks with great ease and dispatch, and as the knives are regulated by set-screws, it gives them a great advantage over all other cylinder cutters. There are other cylinder cutters the knives of which are fastened with rings at the end without wings to support them, and on such cutters the knives are wholly unadjustable, except with keys or wedges, the use of which is thought to be an infringement on the rights of Mr. Hovey. The prices of these machines are, for No. 1, \$10; No. 2, \$12; No. 3, \$15; No. 4, \$20. For sale at the ALBANY AG. WAREHOUSE, 23 Dean-st. and 10 Maiden Lane.

IMPORTED THOROUGH BRED SHORT-HORN BULL, YOUNG FORESTER.

WM. ATKINSON offers the above named bull for sale, and any gentleman wishing to improve his breed of stock, will find this a most seasonable opportunity of doing so, as Young Forester possesses in an extraordinary degree the splendid qualities for which the Short Horns are so justly celebrated.

He is four years old, his color is a rich roan, his symmetry is perfect, his pedigree unrivalled, and he was bred by one of the most famous breeders in the north of England. It is also worthy of remark, that at the several shows in the province of Canada at which he has been exhibited, he has invariably taken the first premium of his class.

Letters (pre-paid,) addressed to WM. ATKINSON, Guelph, Canada West, will meet with immediate attention.
Oct. 1—3t.

NEW-ENGLAND AGRICULTURAL WAREHOUSE AND SEED STORE.

Nos. 51 and 52 North Market-Street, Boston.

FOR sale at this establishment, a general assortment of Agricultural and Garden Implements—Howard's Improved Patent Cast Iron Plows of all sizes, Martin's improved Eagle and other Plows; Double Mould Board, Side-Hill, Paring, and other plows, in great variety, and of the most approved patterns. Howard's Subsoil Plows, Cultivators of different descriptions; Willis' Seed Sower, (the best in use); Geddes' and other Harrows of various patterns; Green's Straw-Cutters, Willis' Straw-Cutters, of various kinds and prices; Gault's Patent Churns, Grindstones or Friction Rollers; Cast Iron Field Rollers, (a very superior and substantial article); Garden Rollers of cast-iron, different sizes; Iron Rakes of every size and variety; Garden Trowels, Syringes, in great variety; Pruning and Budding Knives; Pruning Scissors and Shears in great variety; Grass Hooks and Garden Shears; Garden and Field Hoes of every pattern; Scufflers every size; Pick Axes, Shovels, Spades, Dung and Garden Forks of every description; Hay Tools, including the very best Scythes manufactured in the country, (in all cases warranted); Hall's and other Hay Rakes, Pitch-forks, Grain Cradles, Horse Rakes, Sickles, Austin's Rifles, Whet Stones, &c., &c.

Also a complete assortment of Chains, viz:—Fence Chains—Trace do.—Ox do.—Dog do.—Tie-up do. Hale's Horse Power; Hale's Threshing Machine and Winnowing Mills, Garden Engines, &c.

Also Axes, Hatchets, Bill Hooks, Hammers; Axe, Hoe, and Rake Handles; Ox Yokes, Bull Rings; together with every other article important for Agricultural or Horticultural purposes.

Harris' Paint Mill, the best in use, is also for sale at this establishment.

SEEDS, TREES, AND PLANTS.

The subscribers are enabled to furnish seeds of the purest quality, of every variety of field, vegetable, and flower seed; embracing every variety desirable for cultivation.

Also, Fruit, Forest, and Ornamental Trees and Shrubs, of every description.

Also Hardy Herbaceous Plants; Roses, embracing 500 of the best varieties; Bulbous Roots in great variety. Green-House Plants, Grape Vines, &c.

Orders promptly attended to. **JOSEPH BRECK & Co.**
Boston, Sept. 1—4t.

A GOOD FARM IN AUBURN FOR SALE.

THE subscriber offers for sale the farm on which he now resides, in the village of Auburn, Cayuga county, consisting of 152 acres of good grain and grazing land, well enclosed and watered, and upon which are one large, and three moderate sized DWELLING HOUSES, Carriage Houses, Barns, Sheds, and other necessary out-buildings, three Apple Orchards, a great variety of choice Fruit Trees and Shrubbery, four durable Springs, three wells, two hundred rods of full stone fence, and an inexhaustible QUARRY of a superior quality of grey and blue line stone, suitable for cutting and dressing, eligible and convenient for a continued sale of that article, either rough or hewn, according to the demand, and from which most of the elegant stone buildings in Auburn were erected.

This farm extends from North-street to and across State-street, with a front of eighty-six rods on the former and one hundred and sixteen rods on both sides of the latter—upon either of which may be advantageously sold a great number of village lots, at the pleasure of the owner. About 22 acres, including the large house, barns, sheds, two orchards and garden, lie between North-street and the Auburn and Syracuse Railroad: 65 acres, including the stone quarry and one dwelling house, lie between said Railroad and State-street, and the remaining 65 acres, with two dwelling houses, lie west of State-street—all which is in a high state of cultivation, well fenced, conveniently allotted, and in good order. The whole farm, or either of the above parcels, will be sold cheap, and if desired, time will be given for the payment of a large proportion of the purchase money.

Inquire of Luther Tucker, of Albany, Hulbert & Hall, of Auburn, or the subscriber upon the premises. **GEO. B. CHASE.**
Auburn, Sept. 1, 1846—4t.

TO WOOL-GROWERS.

THE subscribers have a tract of land lying in Patrick Co., Va., consisting of about ten thousand acres, which they wish to sell or rent. It has on it immense quantities of the largest timber, with abundance of water, and water power. A portion of the land has been cleared, and produces the finest grass in the world. We would like to dispose of it, or to enter into partnership with any gentleman who would furnish a flock of sheep, and go into the business of growing wool. Apply by letter to either of the subscribers, at Cumberland Court House, Va., or in person to Col. A. Staples, Patrick Co., Va., who will show the land.

Sept. 1—6t.

WILLIAM W. WILSON
WILLIS WILSON.

ALBANY AG. WAREHOUSE.

DISSOLUTION.—The co-partnership heretofore existing between the subscribers, under the firm of E. COMSTOCK & Co., is this day by mutual consent dissolved. The affairs of the late firm will be settled, and the business continued by LUTHER TUCKER.

Albany, Sept. 9, 1844.

ELON COMSTOCK.
LUTHER TUCKER

CONTENTS OF THIS NUMBER.

COMMUNICATIONS.

How shall we improve? by J.—Salt as a manure, by S. P. } 363
ROLLO,
The Sumac, by Prof. JAS. HALL,
Operation of Plaster, by G. P. LEWIS,
Early History of the Potato, by Jos BRECK,
Draining and Fencing, by W. PENN KINZER,
Weaning Foals, by D. C. C. WRIGHT—Bees—Composition } 369
of Honey, by E. D. ANDREWS,
The Barberry, by J. G. CLARK, Jr.—Charcoal as a Manure, } 372
by H. M. EARLE,
Plan of a Cottage, by ZEA,
Benson's Hydraulic Ram, by W. BACON,
Plowing Match at Montgomery, by S. WAIT, Jr.,
Agricultural Address, by Hon. ZADOCK PRATT,
Entomology, by Prof. T. W. HARRIS,
Mr. Horsford's Letters, No. 15,

EDITORIAL.

Close of the Volume, and Notice to Agents,.....	361
Notices of "The Horticulturist,"	362
The Sumac—its Culture and Uses,	364
Plantations of Pines, Management of,	365
The Black Weevil,	366
On Selecting Fine Fruit,	367
Destroying the Grub and Wire Worm,	368
Bees, and Composition of Honey,	370
Catching Rats—Breeding Stock,	371
Points of Cattle,	374
Supposed Effects of Lightning—Sausage Stuffer,	375
Fat Tailed Sheep—Large and Small Animals,	376
Colton's Patent Bee Hive,	377
Reclaiming Lands in Massachusetts,	378
N. Y. S. Ag. Society—Fruits and Vegetables affected by Soil and Climate—Artichokes,	383
Renovating a Pear Tree—Review of the Season.....	384
Business for the Winter,	385
Gate Hinges—Importation of Leicester Sheep,	386
Answers to Inquiries—Foreign Intelligence—Circulation of the Cultivator,	387
For Correspondents—Monthly Notices,	388

ILLUSTRATIONS.

Fig. 103—Elevation of a Cottage,	373
Fig. 104—Floor of ditto,	373
Fig. 105—Section of ditto,	373
Fig. 106—Sausage Stuffer,	375
Fig. 107—Fat Tailed Sheep,	376
Fig. 108—Colton's Bee Hive,	377
Fig. 109—Renovating a Pear Tree,	384
Figs. 110, 111—Gate Hinges,	386

WILD TURKEYS.

FOR sale, two pair of wild turkeys—one pair of which were sent from Illinois in the fall of 1844, and the others were reared from them the present year. They are well domesticated, and are splendid birds. Price, \$10 per pair. Inquire at the OFFICE OF THE CULTIVATOR.
Dec. 1—2t.

"SANFORD'S PATENT STRAW CUTTERS."

THE subscriber has just received a quantity of these superior machines, made in a superior manner. A few also for Cutting Stalks.
JAS. PLANT, Sole Agent.
No. 5 Burling Slip, N. Y. City.
Dec. 1—2t.

NOTICE.

THE undersigned expects to return from his journeyings in the southern states about the 1st February next, when he hopes to be fully prepared to meet and fill all orders in his line, particularly for his "Warren Horse Powers and Threshers," now so much and perfectly improved, his "Hand Threshers," and the "Trimble Horse Powers," and the Endless Chain Horse Powers—also for the "Platt's Improved Portable Burr Stone Mills,"—together with Ploughs, Castings, Corn-Shellers, &c., &c. In the mean time, however, all orders will be promptly attended to, as usual.
JAS. PLANT, 5 Burling slip, N. Y. City.

Nov. 1—3t.

ALBANY AGRICULTURAL WAREHOUSE AND SEED STORE.

THE subscriber having become the proprietor of the above establishment, has removed it from Dean-st., to the large and central store No. 10 Green-st., (four doors south of State-st.) where he will keep constantly on hand every variety of Farm and Garden Implements, and Field and Garden seeds, which will be sold on as favorable terms as they can be procured at any place in the Union. Among the implements will be found of the different sizes,

Ruggles, Nourse & Mason's Worcester Plows;
Prouy & Co.'s Centre Draft and other Plows;
Hovey's Patent Spiral Straw Cutters, all sizes;
Burrell's Corn Shellers, the best in use;
Grant's Celebrated Fanning Mills;
Geddes' Improved Harrows;
Cultivators, of different patterns.
Lewis' Seed Planter, Shovels, Spades, Hay Knives, Hay and Manure Forks, Cattle Chains, Bull Rings, &c., &c.
Dec. 1

LUTHER TUCKER.

FARM FOR SALE.

A GOOD farm of eighty-two acres, situated in the town of New Haven, (Oswego Co.) twelve miles east of Oswego village. Said farm is well adapted to grain and the different grasses. It is pleasantly located, well watered, and buildings in good repair, with plenty of excellent fruit. It is within three miles of the village of Mexico, which affords facilities for manufacturing, the various mechanic arts, &c., &c.
For further particulars inquire of the subscriber, living on the premises, or of Dr. B. E. Bowen, of Mexico.

ALPHEUS HERBERT.

New-Haven, Sept. 1, 1846.—1t*

PATENT PREMIUM FAN-MILLS.

I. T. GRANT & Co., still continue to manufacture the celebrated Improved Patent Fan-Mills, at the old stand, Junction, Rens. Co., N. Y. These mills have taken the first premium at the following places:—New-York State Fair, at the Institute, New-York, the State Fair, at Pennsylvania, and the State Fair at Maryland. The subscribers have no hesitation in saying that these mills surpass anything of the kind ever offered in market. They are the only mill that has ever been produced that will chaff and screen wheat perfectly clean in one operation.

We also manufacture Grain Cradles of the very best quality, which have taken the first premium at the New-York State Fair. They are for sale at factory prices, at the following places:—

A. B. Allen's, 187 Water-st., New-York;
John Magher & Co., 195 Front-st., New-York.
Luther Tucker's Ag. Warehouse, Albany;
H. Warren's, Troy; and
Viall & Warren's, Mechanicsville, Saratoga Co., N. Y.
Denslow & Webster's, Savannah, Geo.

All orders thankfully received and punctually attended to. AM goods delivered at Troy, N. Y., free of charge.

I. T. GRANT, & Co., Junction P. O., Rens. Co., N. Y.
Feb. 1—tf [2]

AGRICULTURAL WAREHOUSE.

183 Front-st., New-York.

THE subscriber offers for sale an extensive assortment of Farming and Gardening utensils, consisting in part of plows of Freeborn's, Minor's, Horten & Co.'s, Prouty & Mears', and Ruggles, Nourse & Mason's patterns. The Locked Coulters, and Wrought Share Plow.

Corn Shellers, Fanning Mills, Grain Cradles, Corn and Cob Mills, Straw Cutters, of Greene's, Hovey's, Eastman's, and other most approved patterns.

Horse Powers, Threshing Machines, &c. Gin gear, Mill, Horse-power, and all other castings, constantly on hand. Also a general assortment of Brass, Copper, and Iron Wire Cloth, for Paper, Rice, and other mills. Seives, Screens, Riddles, &c., &c.

Persons ordering articles from the subscriber may depend upon having them made of the best materials and in the most workmanlike manner.

JOHN MOORE.

New-York, Oct. 1, 1846

KENDALL'S CYLINDER CHURNS.

THE following in relation to the above churns, from a firm in Vermont, who purchase of us, will show in what estimation the cylinder churns are held.

"We wrote you a few days since, to forward three each of the two smallest size churns. Please send us immediately six each of three sizes. Churns are getting in good demand. Our people think there is quite a saving when they can fetch the butter in two minutes, instead of churning two hours with the old fashioned churn. The Kendall churn is getting to be all the go."

The above churns are always for sale at wholesale or retail, at the Albany Agricultural Warehouse, No. 10 Maiden Lane, and 23 Dean-st.

LUTHER TUCKER.

WIRE CLOTH SEIVE AND SCREEN MANUFACTORY.

THE subscriber has constantly on hand a large assortment of the above articles, which he offers at the lowest market prices.

D. L. CLAWSON.
July, 1846—10 mos. 191 Water-st., New-York.
P. S.—All kinds of wire work manufactured to order.

FINE WOOLED BUCKS.

THE subscriber has had left in his charge, several bucks which are a cross between the Saxon and Merino varieties. They are two years old, of good size and form, and their wool, both in quantity and quality, would be found satisfactory. Further information given on inquiry.
SANFORD HOWARD.

Cultivator Office, Albany, Sept. 1, 1846.

FARM WANTED.

A GENTLEMAN is desirous of purchasing a farm, capable of being occupied strictly as a STOCK FARM, sufficiently near some railroad communicating with the Erie Railroad to facilitate the transportation of stock to market. It is wished that the farm should be situated in a healthful district, with pleasing scenery, and in the immediate vicinity of water, and having a house capable of accommodating a gentleman's family. The soil, and all the appurtenances of the farm, should be such as would yield the owner a good return for his investment. Applications, (paid) may be addressed to Box 2031, New-York Post-Office.

Oct. 1—3t.

